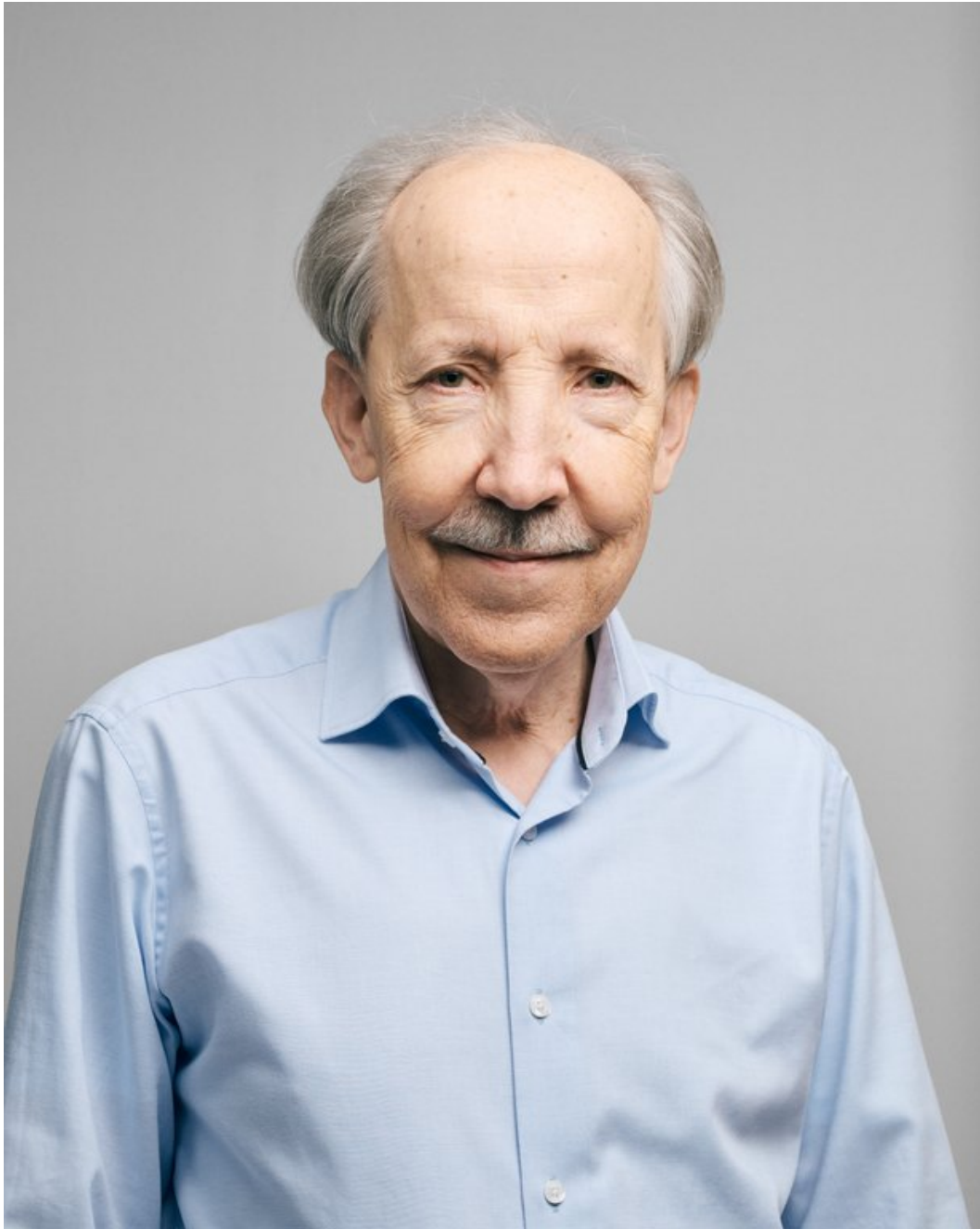




Professor Kari Alitalo
Academy Professor
Research Council for Health
Academy of Finland
Finland



SOCIETAS SCIENTIARUM FENNICA – FINSKA VETENSKAPS-SOCIETETEN
SUOMEN TIEDESEURA THE FINNISH SOCIETY OF SCIENCES AND LETTERS

World Cultural Council

Nomination of Kari Alitalo for the 2023 “Albert Einstein” World Award of Science

Dear Sir or Madam,

The Finnish Society of Sciences and Letters nominates Professor Kari Alitalo for the 2023 “Albert Einstein” World Award of Science. Professor Alitalo is one of the best-known scientists working on vascular and cancer biology. He has discovered vascular growth factors and receptors that are involved in the growth of blood and lymphatic vessels, and in cancer and other human diseases. His results have already been translated to clinical trials and his merits have received international recognition as shown in the attachments.

I strongly recommend Dr. Alitalo as a recipient of the 2019 “Albert Einstein” World Award of Science.

This nomination is supplemented by recommendation letters by two members of the Society, Professor Leif C. Anderson and Professor Caj Haglund.

Helsinki, February 16, 2023

Mats Gyllenberg
Professor
Permanent Secretary
Finnish Society of Sciences and Letters



To
The Nomination Committee
World Cultural Council

Letter of Recommendation for Professor Kari Alitalo

I have had the privilege of closely following the brilliant career of Professor Kari Alitalo (b. 1952). Already his thesis work in 1981 rendered him primus doctorate at the X Promotion of the Medical Faculty at the University of Helsinki. After two successful year as postdoctoral fellow in the USA he returned to Helsinki in 1984 and established a research group. Alitalo has been professor of Medical Biochemistry, University of Turku in 1968, Research Professor of the Finnish Cancer Institute in 1987, Professor of Cancer Biology, University of Helsinki and is since 1993 Academy Professor at the Academy of Finland.

The scientific career of Kari Alitalo is outstanding. He is an internationally leading authority of research on vascular biology and pathology with special emphasis on the lymphatic vessels. A significant proportion of our current knowledge of the molecular regulation of growth and development of the lymphatic vasculature is derived from Alitalo's groundbreaking research. He was the first to identify and characterize specific growth factors, their receptors and the molecular signaling pathways in lymphatic vessels. He defined mutations leading to generalized lymphedema and invented gene therapy for treatment of local lymphedema.

A breakthrough was the demonstration of functional lymphatic vessels in the central nervous system that previously was considered devoid of lymphoid vasculature. This finding opened novel aspects of the pathogenesis of neuroinflammatory and neurodegenerative disorders. It also provided new insights on the mechanisms behind metastatic spread of cancer to the brain. The current rapidly evolving immunotherapy of cancer has added additional actuality to Alitalo's research since the lymphatic vasculature constitutes the main anatomic link between the immune system and the tumor.

Alitalo's extensive scientific production has collected over 100000 citations with and H1 index of 165.

Alitalo has also gained reputation as mentor and educator of young researchers. He has acted as primary supervisor for over 50 completed doctoral thesis works.

I can with pleasure strongly recommend Professor Kari Alitalo as awardee. He personifies scientific excellence.

Helsinki, February 3, 2023

Leif C. Andersson, M.D., PhD:
Professor emeritus of Pathology
University of Helsinki and
Karolinska Institutet
Stockholm, Sweden



Helsinki, February 5, 2023

**To the Nomination Committee
World Cultural Council**

Re: Academy Professor Kari Alitalo

Dear members of the Nomination Committee,

I am writing to express my strong support for Professor Kari Alitalo, an outstanding scientist working on the frontier in the field of cancer research. My capability to evaluate Professor Alitalo's work arises from my own expertise in the field of cancer medicine. I have been closely following Kari Alitalo's extraordinary work for years now and I have known him since Medical School. Since year 2013, my research group belongs to the Translational Cancer Medicine Research Program of the University of Helsinki, a program for which Professor Alitalo is Director. In addition Kari Alitalo is Director of the Wihuri Research Institute and Scientific Director of Academy of Finland Flagship in the Digital Precision Cancer Medicine flagship iCAN.

Professor Alitalo is known for his work on oncogenes and mechanisms of angiogenesis and lymphangiogenesis. To mention some examples: He has characterized several tyrosine kinases including Tie1, the endothelial receptor tyrosine kinase. He cloned the vascular endothelial growth factor (VEGF) receptor-3 and its ligand VEGF-C, and described the significance of the VEGF-C/VEGFR-3 pathway for angiogenesis and lymphangiogenesis. He was also central in the characterization of VEGF-D and VEGF-B. Recently, inhibitors of this pathways from his laboratory have entered phase I clinical trials. Also, he has showed interested in molecular therapies for lymphedema. Another focus in his laboratory is studies of the homeobox transcription factor Prox1 in colon carcinoma stem cells and tumor progression.

Professor Alitalo is worldwide recognized as one of the most outstanding experts in the pathophysiology of cancer and particularly angiogenesis and lymphangiogenesis. His crucial influence on the field, through his outstanding publications and his exceptional multidisciplinary skill sets, is testament that he outshines the majority of his peers. Kari Alitalo is Honorary Academician of Science, and he has got all significant Finnish awards in medicine and several international ones. He has published close to 600 original papers and supervised more than 50 PhD students.



SOCIETAS SCIENTIARUM FENNICA – FINSKA VETENSKAPS-SOCIETETEN

SUOMEN TIEDESEURA

THE FINNISH SOCIETY OF SCIENCES AND LETTERS

I highly recommend Professor Kari Alitalo for the Albert Einstein World Award of Science.

Sincerely,

Caj Haglund, Ph.D., M.D.

Professor Emeritus of Surgery

University of Helsinki and Helsinki University Hospital

Resume

Professor Kari Alitalo (born 21.05.1952) became MD in 1977 and Dr. of Med. Sci. (PhD) 1981 at the University of Helsinki. After two successful years as postdoctoral fellow, first at the Department of Biochemistry, University of Washington and then at the Department of Microbiology and Immunology, UCSD, San Francisco under mentorship of J Michael Bishop. Alitalo returned to the University of Helsinki where he since then has held various research positions. At present he is Academy professor of the Academy of Finland and Director of the Wihuri Research Institute.

Scientific achievements

Kari Alitalo is an outstandingly innovative and productive scientist. A significant proportion of his research deals with the molecular biology and regulation of vascular growth and development with special focus on the lymphatic vessels. He has made several groundbreaking contributions to the current knowledge about the functional biology and pathophysiology of the lymphatic vasculature. He was the first to discover and structurally characterize the lymphangiogenic growth factor (VEGF-C) and its endothelial receptor (VEGFR3) to which he later discovered a second ligand (VEGF-D). He also clarified the molecular signaling pathways regulating sprouting of novel blood and lymphatic vessels. Alitalo has in pioneering papers demonstrated how both cancer cells and tumor macrophages produce VEGF-C that induces growth of lymphatic vessels, which facilitates metastatic cancer spread. Subsequently he demonstrated that missense mutations of the VEGFR3 is a cause of human lymphedema and validated the finding by developing a mouse model of the Milroy's disease. Alitalo showed that binding of the VEGF-C precursor proteins to its receptor requires cleaving by the metalloproteinase ADAMTS3 that he also found to be a target of mutations causing lymphedema. He has established VEGF-C gene therapy that regenerates destroyed lymphatic vessels in a mouse model and found in phase I clinical trial that adenoviral VEGF-C-mediated gene therapy relieves the upper arm lymphedema that is a very common complication following radiotherapy of breast cancer.

The Schlemm's canal that regulates intraocular pressure was previously considered a venous structure. Alitalo's group found that the endothelium of Schlemm's canal is regulated by the lymphangiogenic growth factor VEGF-C and displays lymphangiogenic genetic signature. Since the eye is anatomically an extension of the brain, Alitalo and his group initiated a search for lymphatic vasculature in the central nervous system (CNS) that according to the prevailing concept should not contain such structures. They reported in a groundbreaking paper in *J. Exp. Med.* 2014 the presence of dural lymphatic vessels and could by functional tests demonstrate their fundamental importance for transport of macromolecules from the brain and sub arachnoidal space to the deep cervical lymph nodes. This pioneering work was listed by *Science* among the 10 breakthroughs of 2015 and one of the ten Notable advances in 2015 by *Nature Medicine*. The finding opens new avenues for investigating the pathogenesis behind neurodegenerative and neuroinflammatory disorders like Alzheimer's disease, multiple sclerosis, meningitis and encephalitis. The lymphatic vessels found in the CNS provide an anatomical explanation to the non-hematogenic spread of cancers like breast cancer and melanoma to the brain.

Alitalo's brilliant research has a prodigious impact in the scientific society. He has up till now published about 580 original peer reviewed papers, many of which in highly prestigious journals, and over 140 reviews and editorials. Alitalo's production has collected over 100000 citations (Web of Science, January 2023) with an impressive HI index of 168.

As a highly appreciated speaker Alitalo has since 1984 given over 400 presentations at international meetings and symposia.

Alitalo is a well-organized research leader who also is putting much effort on training and mentoring of young scientists. He has acted as primary supervisor for 54 completed doctoral theses.

Alitalo's outstanding scientific contributions have rendered him numerous honors and awards:

The Anders Jahre Prize for Young Investigator, (Norway 1987), The Äyräpää Prize, (Finland 1998), Europe Medicine Senior Prize 1999, The Lundbeck Foundation Nordic Prize, (Denmark 2002) Stiftung für die Erforschung und Bekämpfung der Krebskrankheiten, (Liechtenstein 2002), Leopold Griffuel Prize, (France 2003) Pfizer Advances in Oncology Award 2005, Eric K Fernström Foundation's Nordic Prize, (Sweden 2005), Louis-Jeantet Prize For Medicine, (Switzerland 2006), The InBev-Baillet Latour Health Prize, (Belgium 2009); The Michael O'Connor Award, Mayo Clinic, (USA 2010), The Anders Jahre Senior Investigator Medical Prize, (Norway 2011) Moosa Plenary Award and Lecture, (South Korea 2011), Earl P. Benditt Award and Lecture, (USA 2011) The Medix Prize for the Best Finnish Paper in the Biosciences in 2010 (2011) A.I. Virtanen Prize, (Finland 2013), Finnish Science Prize, (Finland 2013) Niilo Voipio Award, (Finland 2013), Dr A.H. Heineken Prize for Medicine, (The Netherlands 2014) Jacob Henle Medal, Medical Faculty of Göttingen University, (Germany 2016) The International Antonio Feltrinelli Prize, (Italy 2019)

He is elected member of many scientific societies and organizations, among these:

The Finnish Academy of Sciences and Letters (1991-), The Finnish Society of Sciences and Letters (2009-), The European Academy of Cancer Sciences (2009-), The Academia Europaea (2011-) The European Academy of Tumor Immunology (2011-), The Swedish Royal Academy of Sciences (Sweden 2012-), The National Academy of Sciences (USA 2013-) The Belgian Royal Academy of Medicine (Belgium 2017-)

KARI KUSTAA ALITALO

Born 21.05.1952

Address: Translational Cancer Medicine Research Program and
Wihuri Research Institute
Biomedicum Helsinki, University of Helsinki
Haartmaninkatu 8, P.O. Box 63
00014 Helsinki, Finland
Tel.: +358 294 12 5511
Fax: +358 9 1912 5510
E-mail: kari.alitalo@helsinki.fi
ORCID: <https://orcid.org/0000-0002-7331-0902>
ResearcherID: J-5013-2014

EDUCATION

1976 Educational Commission for Foreign Medical Graduates (USA) - exam
1977 M.D., University of Helsinki
1981 Dr. Med.Sci. (basic sciences, corresponding to Ph.D. degree), University of Helsinki

PRESENT POSITIONS

1993- Academy Professor, Research Council for Health, Academy of Finland
2013-2024 Director, Wihuri Research Institute
2019-2024 Director, Translational Cancer Medicine Research Program, University of Helsinki

PREVIOUS PROFESSIONAL APPOINTMENTS

1977-1982 Research and teaching assistantships, Departments of Pathology and Virology, The Finnish Academy of Sciences, Helsinki, Finland
1981-1982 Visiting Scientist, Department of Biochemistry, University of Washington, Seattle, USA
1982-1983 Visiting Scientist, Department of Microbiology and Immunology, University of California, San Francisco, USA
1983-1986 Research Fellow, Senior RF, State Medical Research Council, Finland
1986-1987 Professor of Medical Biochemistry, University of Turku, Finland
1987-1988 Research Professor, The Finnish Cancer Institute, Helsinki, Finland
1988-1993 Professor of Cancer Biology, University of Helsinki, Helsinki, Finland
1999-2007 Director, Molecular/Cancer Biology Research Program, University of Helsinki
2000-2013 Director, Academy of Finland Centre of Excellence in Cancer Biology, University of Helsinki
2007-2012 Scientific Director, Molecular/Cancer Biology Research Program, University of Helsinki
2013-2018 Director, Translational Cancer Biology Research Program, University of Helsinki
2014-2019 Director, Academy of Finland Centre of Excellence in Translational Cancer Biology, University of Helsinki and University of Turku
2019-2022 Scientific Director, Academy of Finland Flagship in the Digital Precision Cancer Medicine flagship iCAN

JOURNAL EDITORIAL BOARD MEMBERSHIPS

Cancer Research, EMBO Molecular Medicine, Journal of Clinical Investigation, Journal of Experimental Medicine, Molecular Oncology.

SELECTED COMMITTEE/MEMBERSHIP ACTIVITIES (SAB: Scientific Advisory Board)

Executive board, Finnish Association of Pathology, 1985-1992, Chairman 1989-1991

Member, The Scientific Council, IARC/WHO, 1992-1995

Member, The Finnish Academy of Science and Letters, 1991-

Member, EMBO Fund Committee, 1994-1997

SAB, Lymphatic Research Foundation, 1999-2012

Member, Biocentrum Helsinki, Finland, 2000-2012

Board member, Biomedicum Helsinki, 2000-2005

SAB, Center for Transgene Technology & Gene Therapy, Belgium, 2001-2005

SAB, Institute for Cancer Research and Treatment, Turin, Italy, 2001-2008

SAB, Fondation Lefoulon-Delalande, Institute De France, 2002-2021

SAB, Circadian Technologies Ltd/Vegenics 2007-2015

SAB, North American Vascular Biology Organization, 2007-2014

Member, The Finnish Society of Science and Letters, 2009-

Fellow of The European Academy of Cancer Sciences, 2009-

Board member, Biocenter Oulu, 2009-2010

SAB, Louis-Jeantet Foundation, 2017-

Member, Academia Europaea, The Academy of Europe, 2011-

Member, European Academy of Tumor Immunology, 2011-

Member, Swedish Royal Academy of Sciences, 2012-

Foreign Associate, National Academy of Sciences, USA 2013-

Member, Belgian Royal Academy of Medicine, Belgium 2017-

MENTOR FOR DOCTORAL TRAINING: 54 completed theses

1. Robert Winqvist: Chromosomal analysis of amplified oncogenes and myc protein, 1986
2. Kalle Saksela: *Myc* genes in human lung cancer: regulation and amplification, 1989
3. Lea Sistonen: Regulation of gene expression by c-Ha-ras and neu oncoproteins, 1990
4. Heikki Lehtälä: Functional analysis of the neu oncoprotein by recombinant DNA techniques, 1991
5. Laura Lehtola: Analysis of the neu oncoprotein and other tyrosine kinases expressed in breast cancer cells, 1991
6. Päivi Koskinen: Regulation and roles of c-myc and other growth factor-responsive genes, 1991
7. Tomi Mäkelä: Studies on myc family and associated proteins: identification of the rlf-L-myc rearrangement, 1991
8. Juha Partanen: Molecular cloning and characterization of novel tyrosine kinases expressed in K562 human leukemia cells, 1992
9. Elina Armstrong: Analysis of chromosomal location and expression of novel leukemia cell receptor tyrosine kinase genes, 1993
10. Harri Hirvonen: Of Myc and Men - expression of MYC proto-oncogenes in human fetal development, leukemias and brain tumors, 1993
11. Liisa Pertovaara: Gene regulation by transforming growth factor- β and inducers of tumor cell differentiation, 1994
12. Jaana Korhonen: Characterization of endothelial receptor tyrosine kinases Tie and Flt4 in angiogenesis, 1995
13. Katri Pajusola: Cloning and characterization of a new endothelial receptor tyrosine kinase Flt-4 and two novel VEGF-like growth factors VEGF-B and VEGF-C, 1996

14. Imre Västrik: Max, Δ Max and Mad1 as regulations of Myc proteins, 1996
15. Satu Vainikka: Signal Transduction and expression of FGF receptor-4, 1996
16. Erika Hatva: Receptor tyrosine kinases and growth factors in human brain tumors and vascular malformations, 1996
17. Arja Kaipainen: Molecular control of lymphangiogenesis: Role of VEGF-C and its receptors, 1997
18. Juha Klefström: Oncogenes as regulators of tumor necrosis factor induced cell death, 1997
19. Petri Salven: Angiogenic molecules and cancer. Role of the vascular endothelial growth factor family, 1998
20. Birgitta Olofsson: Studies of the vascular endothelial growth factors, VEGFs, and their receptors focusing on VEGF-B, 1999
21. Athina Lymboussaki: Vascular endothelial growth factors and their receptors in embryos, adults and tumors, 1999
22. Eola Valdre: Endothelial-specific regulation of vessel formation: Role of receptor tyrosine kinases, 2000
23. Taina Partanen: Lymphatic vs blood vascular endothelial growth factors and receptors in human tissues and diseases, 2000
24. Lotta Jussila: VEGFR-3 in angiogenesis and lymphangiogenesis, 2001
25. Marika Kärkkäinen: VEGFR-3 in primary lymphedema, 2001
26. Taija Mäkinen: Molecular mechanisms of lymphangiogenesis: role of VEGFR-3 mediated signaling, 2002
27. Tanja Veikkola: Dissecting VEGFR-2 and VEGFR-3 function: VEGFR-3 mediates lymphangiogenic signals, 2002
28. Anne Saaristo: In vivo effects and therapeutic potential of VEGF-C, 2002
29. Michael Jeltsch: VEGFR-3 ligands and Lymphangiogenesis, 2002
30. Niklas Ekman: The Bmx tyrosine kinase: A signal mediator in hematopoietic and endothelial/epithelial cells, 2003
31. Karri Paavonen: Vascular endothelial growth factors and the Bmx tyrosine kinase in the regulation of angiogenesis and lymphangiogenesis, 2003
32. Bernt Enholm: Vascular Endothelial Growth Factors B and -C: Gene Regulation and Gene Transfer in Vivo, 2004
33. Marko Uutela: PDGF-D: a novel member of the platelet-derived growth factor family, 2004
34. Iiro Rajantie: Bone marrow progenitor cells and vascular endothelium: studies on the in vivo differentiation capacity and the role of Bmx tyrosine kinase, 2004
35. Kristiina Iljin: Transcriptional regulation of endothelial cell-specific Tie1 and Vegfr3 genes, 2004
36. Terhi Kärpänen: Lymphatic vessels in health and disease: Role of the VEGF-C/VEGFR-3 pathway and the transcription factor FOXC2, 2006
37. Maria Wirzenius: VEGFR-2 and VEGFR-3 specific signaling in lymphangiogenesis and angiogenesis, 2007
38. Tuomas Tammela: VEGFR-3 and Tie pathways in vascular network formation, 2008
39. Paula Haiko: VEGF-C/VEGFR-3 and PDGF-B/PDGFR-ss pathways in embryonic lymphangiogenesis, 2008
40. Marja Lohela: VEGF-C and angiopoietins in lymphangiogenesis, 2008
41. Camilla Norrmén: Lymphatic vascular maturation: roles of FOXC2, NFATc1 and liprin β 1, 2009
42. Emilia Gaal: On the genetics of intracranial aneurysm and on growth factor induced angiogenesis in the murine brain, 2012
43. Maija Bry: The function of vascular endothelial growth factor-B in the heart, 2013
44. Wei Zheng: Regulation of (Lymph) Angiogenesis by Endothelial Signaling Molecules, 2013

45. Georgia Zarkada: VEGFR3 and Notch signaling in angiogenesis, 2014
46. Tanja Holopainen: Targeting endothelial tyrosine kinase pathway in tumor growth and metastasis, 2016
47. Harri Nurmi: Role of the VEGFC/VEGFR3 pathway, beyond developmental lymphangiogenesis, 2017
48. Krista Heinolainen: Analysis of Vascular endothelial growth factor function in gene-targeted mice, 2018
49. Jenny Högstöm-Stakem: Analysis of molecular mechanisms in intestinal stem cells and colorectal cancer progression, 2018
50. Markus Räsänen: Vascular Endothelial Growth Factor-B and the Bmx tyrosine kinase in cardiac hypertrophy and revascularization, 2019
51. Sawan Kumar Jha: Mechanism of VEGF-C activation and effect on lymphatic vessel growth and regeneration, 2020
52. Emilia Korhonen: The endothelial angiopoietin-Tie signaling pathway in development and disease, 2020
53. Karthik Amudhala Hemanthakumar: Cardiac endothelial cells: Potential therapeutic targets in heart disease, 2021
54. Marianne Lähde: Discovery of a novel function for R-spondin1 as a suppressor of intestinal adenomas, 2022

HONORS/AWARDS

1981

1. Primus Doctorum in the X Promotion of The Medical Faculty, University of Helsinki

1987

2. The Anders Jahre Prize for Young Investigator, Norway
3. Farnos Oy Science Prize, Turku, Finland

1990

4. The Medix Prize for the Best Finnish Paper in the Biosciences in 1989
5. Member, European Molecular Biology Organization (EMBO)

1998

6. The Äyräpää Prize, Finland
7. The Medix Prize for the Best Finnish Paper in the Biosciences in 1997

1999

8. Europe Medicine Senior Prize

2002

9. The Lundbeck Foundation Nordic Prize, Denmark
10. Stiftung für die Erforschung und Bekämpfung der Krebskrankheiten, Liechtenstein

2003

11. Leopold Griffuel Prize, France

2005

12. Pfizer Advances in Oncology Award
13. Eric K Fernström Foundation's Nordic Prize, Sweden

2006

14. Louis-Jeantet Prize For Medicine, Switzerland

2009

15. The InBev-Baillet Latour Health Prize, Belgium

16. Fellow of The European Academy of Cancer Sciences

2010

17. The Michael O'Connor Award, Mayo Clinic, USA

18. The Anders Jahre Senior Medical Prize, Norway

2011

19. Moosa Plenary Award and Lecture, South Korea

20. Earl P. Benditt Award and Lecture, USA

21. The Medix Prize for the Best Finnish Paper in the Biosciences in 2010

2012

22. Commander of the Order of the Lion of Finland

2013

23. A.I. Virtanen Prize, Finland

24. Finnish Science Prize, Finland

25. Niilo Voipio Award, Finland

2014

26. Dr A.H. Heineken Prize for Medicine, The Netherlands

2016

27. Jacob Henle Medal, Medical Faculty of Göttingen University, Germany

28. Joseph Austin McCartney and Ruth McCartney Hauck Visiting Professorship, Mayo Clinic, USA

2018

29. Honorary Doctorship, Uppsala University, Sweden

2019

30. The International Antonio Feltrinelli Prize, Italy

2020

31. Honorary Academician of Science, Finland

2022

32. Commander, First Class, of the Order of the Lion of Finland

INVITED PRESENTATIONS

Over 400 invited talks in international meetings since 1984.

PATENTS

Inventor in numerous patents filed to the United States Patent and Trademark Office since 1995.

PUBLICATIONS

572 original publications in peer-reviewed journals, 144 reviews and editorials. Publications cited 93 468 times according to SSI. H-index: 161.

DISCOVERIES

Dr. Kari Alitalo discovered mechanisms of lymphangiogenesis, the development and regeneration of lymphatic vessels. He discovered vascular endothelial growth factor receptor 3 (VEGFR3), and its ligand, the first lymphangiogenic factor VEGF-C and contributed characterisation of the second ligand, VEGF-D. He furthermore discovered Tie1 (Tie), a ligandless receptor that is necessary maintenance of VEGFR3 expression on lymphatic endothelial cell surface, and thus for lymphangiogenesis. With geneticists, Dr. Alitalo showed that VEGFR3 has missense point mutations in human lymphedema. He developed a mouse model for human lymphedema called Milroy's disease. He found that VEGF-C precursor protein binding to VEGFR3 requires cleavage by ADAMTS3 metalloprotease that was later shown to be target of mutations in lymphedema. He

established VEGF-C gene therapy to regenerate damaged collecting lymphatic vessels in mice, and a phase clinical trial using a combination of adenoviral VEGF-C gene and lymph node transfer treatment of secondary lymphedema in breast cancer patients.

LIST OF ANNOTATED KEY PUBLICATIONS

1. Leppänen VM, Brouillard P, Korhonen EA, Sipilä T, Jha SK, Revencu N, Labarque V, Fastré E, Schlögel M, Ravoet M, Singer A, Luzzatto C, Angelone D, Crichiutti G, D'Elia A, Kuurne J, Elamaa H, Koh GY, Saharinen P, Vikkula M, Alitalo K. Characterization of *ANGPT2* mutations associated with primary lymphedema. *Sci Transl Med* 12: eaax8013, 2020.

2. Antila S, Karaman S, Nurmi H, Airavaara M, Voutilainen MH, Mathivet T, Chilov D, Li Z, Koppinen T, Park J-H, Fang S, Aspelund A, Saarma M, Eichmann A, Thomas J-L, Alitalo K. Development and plasticity of meningeal lymphatic vessels. *J Exp Med* 214: 3645-3667, 2017.

Meningeal lymphatics develop postnatally and require continuous VEGF-C stimulation for maintenance.

3. Aspelund A, Antila S, Proulx ST, Karlsen TV, Karaman S, Detmar M, Wiig H, Alitalo K. A dural lymphatic vascular system that drains brain interstitial fluid and macromolecules. *J Exp Med* 212: 991-9, 2015.

Listed amongst the 10 Breakthroughs of 2015 by Science and as one of 10 Notable advances 2015 by Nature Medicine.

4. Aspelund A, Tammela T, Antila S, Nurmi H, Leppänen VM, Zarkada G, Stanczuk L, Francois M, Mäkinen T, Saharinen P, Immonen I, Alitalo K. The Schlemm's canal is a VEGF-C/VEGFR-3-responsive lymphatic-like vessel. *J Clin Invest* 124: 3975-3986, 2014.

Schlemm's canal that regulates intraocular pressure is a target of the lymphangiogenic growth factor VEGF-C.

5. Jeltsch M, Jha SK, Tvorogov D, Anisimov A, Leppänen V-M, Holopainen T, Kivelä R, Ortega S, Kärpänen T, Alitalo K. CCBE1 enhances lymphangiogenesis via a disintegrin and metalloprotease with thrombospondin motifs-3-mediated vascular endothelial growth factor-C activation. *Circulation* 129: 1962-1971, 2014.

Discovery of the first protease that activates VEGF-C and the mechanism of its regulation by CCBE1.

6. Leppänen V-M, Tvorogov D, Kisko K, Prota AE, Jeltsch M, Anisimov A, Markovic-Mueller S, Stüttfeld E, Goldie KN, Ballmer-Hofer K, Alitalo K. Structural and mechanistic insights into VEGF receptor 3 ligand binding and activation. *Proc Natl Acad Sci USA* 110: 12960-12965, 2013.

Atomic resolution structure of the VEGF-C/VEGFR3 complex reveals a homologous receptor-receptor interaction site that is compatible with blocking antibody function (Tvorogov et al., 2010).

7. Tammela T, Zarkada G, Nurmi H, Jakobsson L, Heinolainen K, Tvorogov D, Zheng W, Franco CA, Murtomäki A, Aranda E, Miura N, Ylä-Herttuala S, Fruttiger M, Mäkinen T, Eichmann A, Pollard JW, Gerhardt H, Alitalo K. VEGFR-3 controls tip to stalk conversion at vessel fusion sites by reinforcing Notch signalling. *Nature Cell Biol* 13: 1202-1213, 2011.

The mechanism of ligand-independent VEGFR-3 function in blood vessel fusions.

8. Tammela T, Saaristo A, Holopainen T, Ylä-Herttuala S, Andersson LC, Virolainen S, Immonen I, Alitalo K. Photodynamic ablation of lymphatic vessels and intralymphatic cancer cells prevents metastasis. *Sci Transl Med* 3: 69ra11, 2011.

A new method to inhibit in transit/satellite metastasis.

9. Tvorogov D, Anisimov A, Zheng W, Leppänen V-M, Tammela T, Laurinavicius S, Holnthoner W, Heloterä H, Holopainen T, Jeltsch M, Kalkkinen N, Lankinen H, Ojala P, Alitalo K.

Effective Suppression of Vascular Network Formation by Combination of Antibodies Blocking VEGFR Ligand Binding and Receptor Dimerization. **Cancer Cell** 18: 630-40, 2010.

These results indicate that VEGF receptor directed antibodies that inhibit ligand binding and receptor dimerization have additive or even synergistic effects.

10. V-M Leppänen, A Prota, M Jeltsch, A Anisimov, N Kalkkinen, T Strandin, H Lankinen, A Goldman, K Ballmer-Hofer and K Alitalo: Structural determinants of growth factor binding and specificity by VEGF-Receptor 2. **Proc Natl Acad Sci**, USA, 107: 2425-2430, 2010.

The structure of VEGF-C, and its complex with the main angiogenic receptor VEGFR-2.

11. Tammela T, Zarkada G, Wallgard E, Murtomäki A, Suchting S, Wirzenius M, Waltari M, Hellström M, Schomber T, Peltonen R, Freitas C, Duarte A, Isoniemi H, Laakkonen P, Christofori G, Ylä-Herttuala S, Shibuya M, Pytowski B, Eichmann A, Betsholtz C, Alitalo K. Blocking VEGFR-3 suppresses angiogenic sprouting and vascular network formation. **Nature** 454: 656-60, 2008.

This paper reveals a new mechanism involved in blood vessel sprouting and provides an additional target for angiogenesis inhibition.

12. Tammela T, Saaristo A, Holopainen T, Lyytikä J, Kotronen A, Pitkonen M, Abo-Ramadan U, Ylä-Herttuala S, Petrova TV, Alitalo K. Therapeutic differentiation and maturation of lymphatic vessels after lymph node dissection and transplantation. **Nature Medicine** 13: 1458-66, 2007.

The first evidence that collecting lymphatic vessels can differentiate from lymphatic capillaries in adults and that VEGF-C gene therapy induces this process.

13. He Y, Rajantie I, Pajusola K, Jeltsch M, Holopainen T, Ylä-Herttuala S, Harding T, Jooss K, Takahashi T, Alitalo K. Vascular endothelial cell growth factor receptor 3-mediated activation of lymphatic endothelium is crucial for tumor cell entry and spread via lymphatic vessels. **Cancer Res** 65: 4739-46, 2005.

The mechanism of VEGF-C induced lymphatic sprouting towards as well as dilation of the draining lymphatic vessels, both contributing to lymphatic metastasis. These processes were blocked dose-dependently by inhibition of VEGFR-3.

14. Petrova TV, Kärpänen T, Norrmén C, Mellor R, Tamakoshi T, Finegold D, Ferrell R, Kerjaschki D, Mortimer P, Ylä-Herttuala S, Miura N, Alitalo K. Defective valves and abnormal mural cell recruitment underlie lymphatic vascular failure in lymphedema distichiasis. **Nature Medicine** 10: 974-81, 2004.

Mechanism of development of Lymphedema distichiasis.

15. Kärkkäinen MJ, Haiko P, Sainio K, Partanen J, Taipale J, Petrova TV, Jeltsch M, Jackson DG, Talikka M, Rauvala H, Betsholtz C, Alitalo K. Vascular endothelial growth factor C is required for sprouting of the first lymphatic vessels from embryonic veins. **Nature Immunology** 5: 74-80, 2004.

The results of this paper indicate that VEGF-C is the paracrine factor essential for lymphangiogenesis, and that both Vegfc alleles are required for normal lymphatic development.

16. He Y, Kozaki K, Kärpänen T, Koshikawa K, Ylä-Herttuala S, Takahashi T, Alitalo K. Suppression of tumor lymphangiogenesis and lymph node metastasis by blocking vascular endothelial growth factor receptor 3 signaling. **J Natl Cancer Inst** 94: 819-25, 2002.

Development of VEGFR-3 signaling inhibitor for suppression of tumor lymphangiogenesis and metastasis to regional lymph nodes.

17. Mäkinen T, Jussila L, Veikkola T, Kärpänen T, Kettunen MI, Pulkkanen KJ, Kauppinen R, Jackson DG, Kubo H, Nishikawa S-I, Ylä-Herttuala S, Alitalo K. Inhibition of lymphangiogenesis

with resulting lymphedema in transgenic mice expressing soluble VEGF receptor-3. **Nature Medicine** 7: 199-205, 2001.

Demonstration that a soluble form of VEGFR-3 is a potent inhibitor of VEGF-C/VEGF-D signaling and lymphangiogenesis.

18. Mandriota SJ, Jussila L, Jeltsch M, Compagni A, Baetens D, Prevo R, Banerji S, Huarte J, Montesano R, Jackson DG, Orci L, Alitalo K, Christofori G, Pepper MS. Vascular endothelial growth factor-C-mediated lymphangiogenesis promotes tumour metastasis. **EMBO J** 20: 672-82, 2001.

Demonstration that VEGF-C-induced lymphangiogenesis mediates tumour cell dissemination and the formation of lymph node metastases.

Note the Acknowledgements: "The project presented in this manuscript was conceived and started in Helsinki, and the work is the result of an equal contribution from the laboratories in Helsinki, Vienna and Geneva, together with a major contribution from the Oxford group." This project was thus started in 1995 in Dr. Alitalo's laboratory.

19. Kärpänen T, Egeblad M, Kärkkäinen MJ, Kubo H, Ylä-Herttuala S, Jaattela M, Alitalo K. Vascular endothelial growth factor C promotes tumor lymphangiogenesis and intralymphatic tumor growth. **Cancer Res** 61: 1786-90, 2001.

These data show that VEGF-C facilitates tumor metastasis to the lymphatic vessels and that tumor spread is inhibited by blocking the interaction between VEGF-C and its receptor.

20. Kärkkäinen MJ, Saaristo A, Jussila L, Karila KA, Lawrence EC, Pajusola K, Bueler H, Eichmann A, Kauppinen R, Kettunen MI, Ylä-Herttuala S, Finegold DN, Ferrell RE, Alitalo K. A model for gene therapy of human hereditary lymphedema. **Proc Natl Acad Sci USA** 98: 12677-82, 2001.

First demonstration that growth factor gene therapy would be applicable to human lymphedema and provide a paradigm for other diseases associated with mutant receptors.

21. Kärkkäinen MJ, Ferrell RE, Lawrence EC, Kimak MA, Levinson KL, McTigue MA, Alitalo K, Finegold DN: Missense mutations interfere with VEGFR-3 signalling in primary lymphoedema. **Nature Genetics** 25: 153-159, 2000.

Heterozygous missense mutations of VEGFR-3 were shown to inactivate the tyrosine kinase and downstream gene activation in primary lymphedema, indicating that mutations interfering with VEGFR-3 signal transduction are a cause of primary lymphoedema.

22. Dumont, DJ, Jussila L, Taipale J, Lymboussaki A, Mustonen T, Pajusola K, Breitman M, Alitalo K. Cardiovascular failure in mouse embryos deficient in VEGF receptor-3. **Science** 282: 946-949, 1998.

This paper shows that VEGFR-3 has an essential role in the development of the embryonic cardiovascular system before the emergence of the lymphatic vessels.

24. Jeltsch M, Kaipainen A, Joukov V, Meng X, Lakso M, Rauvala H, Swartz M, Fukumura D, Rakesh KJ, Alitalo K. Hyperplasia of lymphatic vessels in VEGF-C transgenic mice. **Science** 276: 1423-1425, 1997. Citations: 1013

First evidence that VEGF-C induces lymphangiogenesis.

25. Joukov V, Pajusola K, Kaipainen, Chilov DA, Lahtinen I, Kukk E, Saksela O, Kalkkinen N, Alitalo K. A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases. **EMBO J** 15: 290-298, 1996. Citations: 1326

Isolation of the first ligand for VEGFR3.

26. Joukov V, Pajusola K, Kaipainen, Chilov DA, Lahtinen I, Kukk E, Saksela O, Kalkkinen N, Alitalo K. A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases. **EMBO J** 15: 290-298, 1996. Citations: 1326

Isolation of VEGF-C, the first ligand for VEGFR3.

27. Kaipainen A, Korhonen J, Mustonen T, van Hinsbergh VWM, Fang G-H, Dumont D, Breitman M, Alitalo K. Expression of the fms-like tyrosine kinase 4 gene becomes restricted to lymphatic endothelium during development. **Proc Natl Acad Sci** 92: 3566-3570, 1995. Citations: 1095

First evidence that VEGFR3 mediated signals are selective for lymphatic vessels in adults.

28. Partanen J, Armstrong E, Mäkelä TP, Korhonen J, Sandberg M, Renkonen R, Knuutila S, Huebner K, Alitalo K. A novel endothelial cell surface receptor tyrosine kinase with extracellular epidermal growth factor homology domains. **Mol Cell Biol** 12: 1698-1707, 1992. Citations: 301.

Discovery of the endothelial Tie receptor (later renamed Tie1)

Kari Alitalo's ten most important papers

- 1 Leppänen VM, Brouillard P, Korhonen EA, Sipilä T, Jha SK, Revencu N, Labarque V, Fastré E, Schlögel M, Ravoet M, Singer A, Luzzatto C, Angelone D, Crichiutti G, D'Elia A, Kuurne J, Elamaa H, Koh GY, Saharinen P, Vikkula M, Alitalo K. Characterization of *ANGPT2* mutations associated with primary lymphedema. ***Sci Transl Med*** 12: eaax8013, 2020.
- 2 Antlia S, Karaman S, Nurmi H, Airavaara M, Voutilainen MH, Mathivet T, Chilov D, Li Z, Koppinen T, Park J-H, Fang S, Aspelund A, Saarma M, Eichmann A, Thomas J-L, Alitalo K. Development and plasticity of meningeal lymphatic vessels. ***J Exp Med*** 214: 3645-3667, 2017.
- 3 Aspelund A, Antila S, Proulx ST, Karlsen TV, Karaman S, Detmar M, Wiig H, Alitalo K. A dural lymphatic vascular system that drains brain interstitial fluid and macromolecules. ***J Exp Med*** 212: 991-9, 2015.
- 4 Aspelund A, Tammela T, Antila S, Nurmi H, Leppänen VM, Zarkada G, Stanczuk L, Francois M, Mäkinen T, Saharinen P, Immonen I, Alitalo K. The Schlemm's canal is a VEGF-C/VEGFR-3-responsive lymphatic-like vessel. ***J Clin Invest*** 124: 3975-3986, 2014.
- 5 Tammela T, Zarkada G, Nurmi H, Jakobsson L, Heinolainen K, Tvorogov D, Zheng W, Franco CA, Murtomäki A, Aranda E, Miura N, Ylä-Herttuala S, Fruttiger M, Mäkinen T, Eichmann A, Pollard JW, Gerhardt H, Alitalo K. VEGFR-3 controls tip to stalk conversion at vessel fusion sites by reinforcing Notch signalling. ***Nature Cell Biol*** 13: 1202-1213, 2011.
- 6 Tammela T, Zarkada G, Wallgard E, Murtomäki A, Suchting S, Wirzenius M, Waltari M, Hellström M, Schomber T, Peltonen R, Freitas C, Duarte A, Isoniemi H, Laakkonen P, Christofori G, Ylä-Herttuala S, Shibuya M, Pytowski B, Eichmann A, Betsholtz C, Alitalo K. Blocking VEGFR-3 suppresses angiogenic sprouting and vascular network formation. ***Nature*** 454: 656-60, 2008.
- 7 Tammela T, Saaristo A, Holopainen T, Lyytikä J, Kotronen A, Pitkonen M, Abo-Ramadan U, Ylä-Herttuala S, Petrova TV, Alitalo K. Therapeutic differentiation and maturation of lymphatic vessels after lymph node dissection and transplantation. ***Nature Medicine*** 13: 1458-66, 2007.
- 8 Kärkkäinen MJ, Haiko P, Sainio K, Partanen J, Taipale J, Petrova TV, Jeltsch M, Jackson DG, Talikka M, Rauvala H, Betsholtz C, Alitalo K. Vascular endothelial growth factor C is required for sprouting of the first lymphatic vessels from embryonic veins. ***Nature Immunology*** 5: 74-80, 2004.
- 9 Kärpänen T, Egeblad M, Kärkkäinen MJ, Kubo H, Ylä-Herttuala S, Jaattela M, Alitalo K. Vascular endothelial growth factor C promotes tumor lymphangiogenesis and intralymphatic tumor growth. ***Cancer Res*** 61: 1786-90, 2001.

10 Kärkkäinen MJ, Saaristo A, Jussila L, Karila KA, Lawrence EC, Pajusola K, Bueler H, Eichmann A, Kauppinen R, Kettunen MI, Ylä-Herttuala S, Finegold DN, Ferrell RE, Alitalo K. A model for gene therapy of human hereditary lymphedema. ***Proc Natl Acad Sci USA*** 98: 12677-82, 2001.

List of publications of Kari Alitalo

Available online at <https://researchportal.helsinki.fi/en/persons/kari-alitalo/publications/>

<https://orcid.org/0000-0002-7331-0902>

2022

Distinct roles of the meningeal layers in CNS autoimmunity

Merlini, A., Haberl, M., Strauss, J., Hildebrand, L., Genc, N., Franz, J., Chilov, D., Alitalo, K., Fluegel-Koch, C., Stadelmann, C., Fluegel, A. & Odoardi, F., Jul 2022, In: *Nature Neuroscience*. 25, 7, p. 887-+ 43 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 54

Genetic Engineering of Lymphangiogenesis in Skin Does Not Affect Blood Pressure in Mouse Models of Salt-Sensitive Hypertension

Thowsen, I. M., Reikvam, T., Skogstrand, T., Samuelsson, A-M., Muller, D. N., Tenstad, O., Alitalo, K., Karlsen, T. & Wiig, H., Nov 2022, In: *Hypertension*. 79, 11, p. 2451-2462 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 2

Interplay of vascular endothelial growth factor receptors in organ-specific vessel maintenance

Karaman, S., Paavonsalo, S., Heinolainen, K., Lackman, M. H., Ranta, A., Hemanthakumar, K. A., Kubota, Y. & Alitalo, K., 20 Jan 2022, In: *Journal of Experimental Medicine*. 219, 3, 25 p., 20210565.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 42

Lymphangiogenesis requires Ang2/Tie/PI3K signaling for VEGFR3 cell-surface expression

Korhonen, E. A., Murtomäki, A., Jha, S. K., Anisimov, A., Pink, A., Zhang, Y., Stritt, S., Liaqat, I., Stanczuk, L., Alderfer, L., Sun, Z., Kapiainen, E., Singh, A., Sultan, I., Lantta, A., Leppänen, V. M., Eklund, L., He, Y., Augustin, H. G., Vaahtomeri, K., & 3 others, 1 Aug 2022, In: *Journal of Clinical Investigation*. 132, 15, 18 p., e155478.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 20

Lymphatic-to-blood vessel transdifferentiation in zebrafish

Jeltsch, M. & Alitalo, K., 25 May 2022, In: *Nature Cardiovascular Research*. 1, p. 539-541 3 p.

Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 18

Phase 1 Lymfactivin (R) Study: 24-month Efficacy and Safety Results of Combined Adenoviral VEGF-C and Lymph Node Transfer Treatment for Upper Extremity Lymphedema

Leppäpuska, I-M., Hartiala, P., Suominen, S., Suominen, E., Kaartinen, I., Mäki, M., Seppänen, M., Kiiski, J., Viitanen, T., Lahdenpera, O., Vuolanto, A., Alitalo, K. & Saarikko, A. M., Nov 2022, In: *Journal of Plastic, Reconstructive & Aesthetic Surgery*. 75, 11, p. 3938-3945 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

PROX1 transcription factor controls rhabdomyosarcoma growth, stemness, myogenic properties and therapeutic targets

Gizaw, N. Y., Kallio, P., Pungert, T., Gucciardo, E., Haglund, C., Böhling, T., Lehti, K., Sampo, M., Alitalo, K. & Kivelä, R., 6 Dec 2022, In: Proceedings of the National Academy of Sciences of the United States of America. 119, 49, 10 p., e2116220119.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 9

The SARS-CoV-2 receptor ACE2 is expressed in mouse pericytes but not endothelial cells:

Implications for COVID-19 vascular research

Muhl, L., He, L., Sun, Y., Mae, M. A., Pietila, R., Liu, J., Genove, G., Zhang, L., Xie, Y., Leptidis, S., Mocci, G., Stritt, S., Osman, A., Anisimov, A., Hemanthakumar, K. A., Räsänen, M., Hansson, E. M., Björkegren, J., Vanlandewijck, M., Blomgren, K., & 8 others, 10 May 2022, In: Stem cell reports. 17, 5, p. 1089-1104 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 22

VEGF-C/VEGFR-3 signalling in macrophages ameliorates acute lung injury

Yamashita, M., Niisato, M., Kawasaki, Y., Karaman, S., Robciuc, M. R., Shibata, Y., Ishida, Y., Nishio, R., Masuda, T., Sugai, T., Ono, M., Tudor, R. M., Alitalo, K. & Yamauchi, K., 1 Apr 2022, In: European Respiratory Journal. 59, 4, 12 p., 2100880.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 2

β-catenin plus PROX1 immunostaining stratifies disease progression and patient survival in neoadjuvant-treated pancreatic cancer

Eurola, A., Ristimäki, A., Mustonen, H., Nurmi, A-M., Hagström, J., Kallio, P., Alitalo, K., Haglund, C. & Seppänen, H., 2022, In: Tumour biology : the journal of the International Society for Oncodevelopmental Biology and Medicine. 44, 1, p. 69-84 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

2021

3-hydroxy-L-kynurenamine is an immunomodulatory biogenic amine

Clement, C. C., D'Alessandro, A., Thangaswamy, S., Chalmers, S., Furtado, R., Spada, S., Mondanelli, G., Ianni, F., Gehrke, S., Gargaro, M., Manni, G., Lopez Cara, L. C., Runge, P., Tsai, W. L., Karaman, S., Arasa, J., Fernandez-Rodriguez, R., Beck, A., Macchiarulo, A., Gadina, M., & 15 others, 21 Jul 2021, In: Nature Communications. 12, 1, 17 p., 4447.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 31

Cardiac-specific VEGFB overexpression reduces lipoprotein lipase activity and improves insulin action in rat heart

Shang, R., Lal, N., Lee, C. S., Zhai, Y., Puri, K., Seira, O., Boushel, R. C., Sultan, I., Räsänen, M., Alitalo, K., Hussein, B. & Rodrigues, B., Dec 2021, In: American Journal of Physiology: Endocrinology and Metabolism. 321, 6, p. E753-E765 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Common laboratory mice are susceptible to infection with the SARS-CoV2 beta variant

Kant, R., Kareinen, L., Smura, T., Freitag, T. L., Jha, S. K., Alitalo, K., Meri, S., Sironen, T., Saksela, K., Strandin, T., Kipar, A. & Vapalahti, O., 11 Nov 2021, In: Viruses (Basel). 13, 11, 11 p., 2263.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 5

Counteracting age-related VEGF signaling insufficiency promotes healthy aging and extends life span
Grunewald, M., Kumar, S., Sharife, H., Volinsky, E., Gileles-Hillel, A., Licht, T., Permyakova, A., Hinden, L., Azar, S., Friedmann, Y., Kupetz, P., Tzuberi, R., Anisimov, A., Alitalo, K., Horwitz, M., Leebhoff, S., Khoma, O. Z., Hlushchuk, R., Djonov, V. G., Abramovitch, R., & 2 others, 30 Jul 2021, In: *Science*. 373, 6554, p. 533-+ 56 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 276

Expression of R-Spondin 1 in Apc(Min/+) Mice Suppresses Growth of Intestinal Adenomas by Altering Wnt and Transforming Growth Factor Beta Signaling

Lähde, M., Heino, S., Höglström, J., Kaijalainen, S., Anisimov, A., Flanagan, D., Kallio, P., Leppänen, V-M., Ristimäki, A., Ritvos, O., Wu, K., Tammela, T., Hodder, M., Sansom, O. J. & Alitalo, K., 1 Jan 2021, In: *Gastroenterology*. 160, 1, p. 245-259 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 87

Lef1 restricts ectopic crypt formation and tumor cell growth in intestinal adenomas

Heino, S., Fang, S., Lähde, M., Höglström, J., Nassiri, S., Campbell, A., Flanagan, D., Raven, A., Hodder, M., Nasreddin, N., Xue, H-H., Delorenzi, M., Leedham, S., Petrova, T., Sansom, O. & Alitalo, K., Nov 2021, In: *Science Advances*. 7, 47, 18 p., 0512.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 33

Lymphatic Malformations Genetics, Mechanisms and Therapeutic Strategies

Mäkinen, T., Boon, L. M., Vikkula, M. & Alitalo, K., 25 Jun 2021, In: *Circulation Research*. 129, 1, p. 136-154 19 p.

Research output: Contribution to journal › Review Article › peer-review

Open AccessFile

Article has an altmetric score of 10

Lysophosphatidylcholine in phospholipase A(2)-modified LDL triggers secretion of angiopoietin 2

Nguyen, SD., Korhonen, EA., Lorey, MB., Hakanpaa, L., Mayranpaa, MI., Kovanen, PT., Saharinen, P., Alitalo, K. & Oorni, K., Jun 2021, In: *Atherosclerosis*. 327, p. 87-99 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 8

NOTUM from Apc-mutant cells biases clonal competition to initiate cancer

Flanagan, D. J., Pentimikko, N., Luopajarvi, K., Willis, N. J., Gilroy, K., Raven, A. P., McGarry, L., Englund, J. I., Webb, A. T., Scharaw, S., Nasreddin, N., Hodder, M. C., Ridgway, R. A., Minnee, E., Sphyris, N., Gilchrist, E., Najumudeen, A. K., Romagnolo, B., Perret, C., Williams, A. C., & 16 others, 17 Jun 2021, In: *Nature*. 594, 7863, p. 430-435 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 187

Pro-lymphangiogenic VEGFR-3 signaling modulates memory T cell responses in allergic airway inflammation

Maisel, K., Hrusch, C. L., Medellin, J. E. G., Potin, L., Chapel, D. B., Nurmi, H., Camacho, D. F., Gleyzer, R., Alitalo, K., Sperling, A. & Swartz, M. A., Jan 2021, In: *Mucosal immunology*. 14, 1, p. 144-151 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 8

VEGF-B Promotes Endocardium-Derived Coronary Vessel Development and Cardiac Regeneration

Räsänen, M., Sultan, I., Paech, J., Hemanthakumar, K. A., Yu, W., He, L., Tang, J., Sun, Y., Hlushchuk, R., Huan, X., Armstrong, E., Khoma, O-Z., Mervaala, E., Djonov, V., Betsholtz, C., Zhou, B., Kivelä, R. & Alitalo, K., 5 Jan 2021, In: *Circulation*. 143, 1, p. 65-77 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 55

2020

Age-Dependent Remarkable Regenerative Potential of the Dentate Gyrus Provided by Intrinsic Stem Cells

Licht, T., Kreisel, T., Biala, Y., Mohan, S., Yaari, Y., Anisimov, A., Alitalo, K. & Keshet, E., 29 Jan 2020, In: *Journal of Neuroscience*. 40, 5, p. 974-995 22 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 53

Angiopoietin-2 blockade ameliorates autoimmune neuroinflammation by inhibiting leukocyte recruitment into the CNS

Li, Z., Korhonen, E. A., Merlini, A., Strauss, J., Wihuri, E., Nurmi, H., Antila, S., Paech, J., Deutsch, U., Engelhardt, B., Chintharlapalli, S., Koh, G. Y., Flügel, A. & Alitalo, K., 1 Apr 2020, In: *Journal of Clinical Investigation*. 130, 4, p. 1977-1990 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 8

Blockade of VEGF-C signaling inhibits lymphatic malformations driven by oncogenic PIK3CA mutation

Martinez-Corral, I., Zhang, Y., Petkova, M., Ortsater, H., Sjöberg, S., Castillo, S. D., Brouillard, P., Libbrecht, L., Saur, D., Graupera, M., Alitalo, K., Boon, L., Vikkula, M. & Mäkinen, T., 8 Jun 2020, In: *Nature Communications*. 11, 1, 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 27

Blocking Angiopoietin-2 Promotes Vascular Damage and Growth Inhibition in Mouse Tumors Treated with Small Doses of Radiation

Kallio, P., Jokinen, E., Höglström, J., Das, S., Heino, S., Lähde, M., Brodtkin, J., Korhonen, E. A. & Alitalo, K., 15 Jun 2020, In: *Cancer Research*. 80, 12, p. 2639-2650 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 3

Characterization of ANGPT2 mutations associated with primary lymphedema

Leppänen, V-M., Brouillard, P., Korhonen, E. A., Sipilä, T., Jha, S. K., Revencu, N., Labarque, V., Fastré, E., Schlögel, M., Ravoet, M., Singer, A., Luzzatto, C., Angelone, D., Crichiutti, G., D'Elia, A., Kuurne, J., Elamaa, H., Koh, G. Y., Saharinen, P., Vikkula, M., & 1 others, 9 Sep 2020, In: *Science translational medicine*. 12, 560, 10 p., 8013.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 110

Distinct fibroblast subsets regulate lacteal integrity through YAP/TAZ-induced VEGF-C in intestinal villi

Hong, S. P., Yang, M. J., Cho, H., Park, I., Bae, H., Choe, K., Suh, S. H., Adams, R. H., Alitalo, K., Lim, D. & Koh, G. Y., 14 Aug 2020, In: Nature Communications. 11, 1, 16 p., 4102.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 116

Lymphatic and Immune Cell Cross-Talk Regulates Cardiac Recovery After Experimental Myocardial Infarction

Houssari, M., Dumesnil, A., Tardif, V., Kivela, R., Pizzinat, N., Boukhalfa, I., Godefroy, D., Schapman, D., Hemanthakumar, K. A., Bizou, M., Henry, J-P., Renet, S., Riou, G., Rondeaux, J., Anouar, Y., Adriouch, S., Fraineau, S., Alitalo, K., Richard, V., Mulder, P., & 1 others, Jul 2020, In: Arteriosclerosis, Thrombosis, and Vascular Biology. 40, 7, p. 1722-1737 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 26

Lymphatic Vessels in Tumor Dissemination versus Immunotherapy

Vahtomeri, K. & Alitalo, K., 1 Sep 2020, In: Cancer Research. 80, 17, p. 3463-3465 3 p.

Research output: Contribution to journal › Editorial › Scientific

Open AccessFile

Article has an altmetric score of 4

Pericyte-specific vascular expression of SARS-CoV-2 receptor ACE2 – implications for microvascular inflammation and hypercoagulopathy in COVID-19

He, L., Mäe, M. A., Muhl, L., Sun, Y., Pietilä, R., Nahar, K., Vázquez Liébanas, E., Jonsson Fagerlund, M., Oldner, A., Liu, J., Genové, G., Zhang, L., Xie, Y., Leptidis, S., Mocci, G., Stritt, S., Osman, A. M., Anisimov, A., Amudhala Hemanthakumar, K., Räsänen, M., & 12 others, 26 Jul 2020, In: bioRxiv : the preprint server for biology . 44 p.

Research output: Contribution to journal › Article › Scientific

Article has an altmetric score of 137

Phase 1 Lymfactin (R) Study: Short-term Safety of Combined Adenoviral VEGF-C and Lymph Node Transfer Treatment for Upper Extremity Lymphedema

Hartiala, P., Suominen, S., Suominen, E., Kaartinen, I., Kiiski, J., Viitanen, T., Alitalo, K. & Saarikko, A. M., Sep 2020, In: Journal of Plastic, Reconstructive & Aesthetic Surgery. 73, 9, p. 1612-1621 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 15

Platelet-Specific PDGFB Ablation Impairs Tumor Vessel Integrity and Promotes Metastasis

Zhang, Y., Cedervall, J., Hamidi, A., Herre, M., Viitanen, K., D'Amico, G., Miao, Z., Unnithan, R. V. M., Vaccaro, A., van Hooren, L., Georganaki, M., Thulin, A., Qiao, Q., Andrae, J., Siegbahn, A., Heldin, C-H., Alitalo, K., Betsholtz, C., Dimberg, A. & Olsson, A-K., 15 Aug 2020, In: Cancer Research. 80, 16, p. 3345-3358 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 87

PROX1 transcription factor is a master regulator of myogenic and oncogenic features of rhabdomyosarcoma

Gizaw, N. Y., Kallio, P., Punger, T., Kinnunen, M., Gucciardo, E., Lehti, K., Haglund, C., Böhling, T., Varjosalo, M., Sampo, M., Alitalo, K. & Kivelä, R., 20 Apr 2020, (In preparation) In: bioRxiv. Research output: Contribution to journal › Article › Scientific

Article has an altmetric score of 1

Susceptibility To Cardiac Arrhythmias And Sympathetic Nerve Growth In Vegf-B Overexpressing Myocardium

Lähteenvuo, J., Hätinén, O-P., Kuivanen, A., Huusko, J., Paananen, J., Lähteenvuo, M., Nurro, J., Hedman, M., Hartikainen, J., Laham-Karam, N., Mäkinen, P., Räsänen, M., Alitalo, K., Rosenzweig, A. & Ylä-Herttuala, S., 8 Jul 2020, In: Molecular therapy. 28, 7, p. 1731-1740 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 3

The GEF Trio controls endothelial cell size and arterial remodeling downstream of Vegf signaling in both zebrafish and cell models

Klems, A., van Rijssel, J., Ramms, A. S., Wild, R., Hammer, J., Merkel, M., Derenbach, L., Preau, L., Hinkel, R., Suarez-Martinez, I., Schulte-Merker, S., Vidal, R., Sauer, S., Kivela, R., Alitalo, K., Kupatt, C., van Buul, J. D. & le Noble, F., 21 Oct 2020, In: Nature Communications. 11, 1, 20 p., 5319.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 86

VEGF-C-driven lymphatic drainage enables immunosurveillance of brain tumours

Song, E., Mao, T., Dong, H., Boisserand, L. S. B., Antila, S., Bosenberg, M., Alitalo, K., Thomas, J-L. & Iwasaki, A., 30 Jan 2020, In: Nature. 577, 7792, p. 629-630 21 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 422

VEGF-C protects the integrity of the bone marrow perivascular niche in mice

Fang, S., Chen, S., Nurmi, H., Leppänen, V-M., Jeltsch, M., Scadden, D. T., Silberstein, L., Mikkola, H. & Alitalo, K., 15 Oct 2020, In: Blood. 136, 16, p. 1871–1883 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Article has an altmetric score of 1

2019

Anatomy and function of the vertebral column lymphatic network in mice

Jacob, L., Boisserand, L. S. B., Geraldo, L. H. M., Neto, J. D. B., Mathivet, T., Antila, S., Barka, B., Xu, Y., Thomas, J-M., Pestel, J., Aigrot, M-S., Song, E., Nurmi, H., Lee, S., Alitalo, K., Renier, N., Eichmann, A. & Thomas, J-L., 9 Oct 2019, In: Nature Communications. 10, 16 p., 4594.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 19

Cardiac lymphatics in health and disease

Brakenhielm, E. & Alitalo, K., Jan 2019, In: Nature reviews. Cardiology. 16, 1, p. 56-68 13 p.

Research output: Contribution to journal › Review Article › peer-review

Open AccessFile

Article has an altmetric score of 18

Dural lymphatics regulate clearance of extracellular tau from the CNS

Patel, T. K., Habimana-Griffin, L., Gao, X., Xu, B., Achilefu, S., Alitalo, K., McKee, C. A., Sheehan, P. W., Musiek, E. S., Xiong, C., Coble, D. & Holtzman, D. M., 27 Feb 2019, In: *Molecular Neurodegeneration*. 14, 9 p., 11.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 27

Endothelial Cells Regulate Physiological Cardiomyocyte Growth via VEGFR2-Mediated Paracrine Signaling

Kivelä, R., Hemanthakumar, K. A., Vaparanta, K., Robciuc, M., Izumiya, Y., Kidoya, H., Takakura, N., Peng, X., Sawyer, D. B., Elenius, K., Walsh, K. & Alitalo, K., 28 May 2019, In: *Circulation*. 139, 22, p. 2570-2584 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 28

Genetic Variants of VEGFA and FLT4 Are Determinants of Survival in Renal Cell Carcinoma Patients Treated with Sorafenib

Crona, D. J., Skol, A. D., Leppänen, V.-M., Glubb, D. M., Etheridge, A. S., Hilliard, E., Pena, C. E., Peterson, Y. K., Klauber-DeMore, N., Alitalo, K. K. & Innocenti, F., 1 Jan 2019, In: *Cancer Research*. 79, 1, p. 231-241 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 6

Gut microbiota regulates lacteal integrity by inducing VEGF-C in intestinal villus macrophages

Suh, S. H., Choe, K., Hong, S. P., Jeong, S., Mäkinen, T., Kim, K. S., Alitalo, K., Surh, C. D., Koh, G. Y. & Song, J.-H., Apr 2019, In: *EMBO Reports*. 20, 4, 20 p., 46927.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 12

High baseline Tie1 level predicts poor survival in metastatic breast cancer

Tiainen, L., Korhonen, E. A., Leppänen, V.-M., Luukkaala, T., Hämäläinen, M., Tanner, M., Lahdenperä, O., Vihinen, P., Jukkola, A., Karihtala, P., Aho, S., Moilanen, E., Alitalo, K. & Kellokumpu-Lehtinen, P.-L., 24 Jul 2019, In: *BMC Cancer*. 19, 10 p., 732.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

KLK3/PSA and cathepsin D activate VEGF-C and VEGF-D

Jha, S. K., Rauniyar, K., Chronowska, E., Mattonet, K., Maina, E., Koistinen, H., Stenman, U. H., Alitalo, K. & Jeltsch, M., 17 May 2019, In: *eLife*. 8, 30 p., 44478.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 37

Nobelin palkinto 2019 solujen hapen-tunnistusmekanismien löytäjille

Jaakkola, P., Myllyharju, J., Karppinen, P. & Alitalo, K., 2019, In: *Duodecim*. 135, 22, p. 2195-2198 4 p.

Research output: Contribution to journal › Article › Professional

Open AccessFile

Systemic Blockade of ACVR2B Ligands Protects Myocardium from Acute Ischemia-Reperfusion Injury

Magga, J., Vainio, L., Kilpio, T., Hulmi, J. J., Taponen, S., Lin, R., Räsänen, M., Szabo, Z., Gao, E., Rahtu-Korpela, L., Alakoski, T., Ulvila, J., Laitinen, M., Pasternack, A., Koch, W. J., Alitalo, K., Kivela, R., Ritvos, O. & Kerkelä, R., 6 Mar 2019, In: *Molecular therapy*. 27, 3, p. 600-610 11 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

Article has an altmetric score of 4

VEGFC Reduces Glomerular Albumin Permeability and Protects Against Alterations in VEGF Receptor Expression in Diabetic Nephropathy

Onions, K. L., Gamez, M., Buckner, N. R., Baker, S. L., Betteridge, K. B., Desideri, S., Dallyn, B. P., Ramnath, R. D., Neal, C. R., Farmer, L. K., Mathieson, P. W., Gnudi, L., Alitalo, K., Bates, D. O., Salmon, A. H. J., Welsh, G. I., Satchell, S. C. & Foster, R. R., Jan 2019, In: *Diabetes*. 68, 1, p. 172-187 16 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 18

2018

Consensus guidelines for the use and interpretation of angiogenesis assays

Nowak-Sliwinska, P., Alitalo, K., Allen, E., Anisimov, A., Aplin, A. C., Auerbach, R., Augustin, H. G., Bates, D. O., van Beijnum, J. R., Bender, R. H. F., Bergers, G., Bikfalvi, A., Bischoff, J., Boeck, B. C., Brooks, P. C., Bussolino, F., Cakir, B., Carmeliet, P., Castranova, D., Cimpean, A. M., & 66 others, Aug 2018, In: *Angiogenesis*. 21, 3, p. 425-532 108 p.

Research output: Contribution to journal > Review Article > peer-review

Open Access

Article has an altmetric score of 25

Heterogeneity in VEGFR3 levels drives lymphatic vessel hyperplasia through cell-autonomous and non-cell-autonomous mechanisms

Zhang, Y., Ulvmar, M. H., Stanczuk, L., Martinez-Corral, I., Frye, M., Alitalo, K. & Mäkinen, T., 3 Apr 2018, In: *Nature Communications*. 9, 15 p., 1296.

Research output: Contribution to journal > Article > Scientific > peer-review

High baseline Tie1 predicts poor survival in metastatic breast cancer

Tiainen, L., Korhonen, E. A., Luukkaala, T., Hamalainen, M., Tanner, M., Lahdenpera, O., Vihinen, P., Jukkola, A., Karihtala, P., Moilanen, E., Alitalo, K. & Kellokumpu-Lehtinen, P. L., Apr 2018, In: *European Journal of Cancer*. 92, p. S135-S135 1 p.

Research output: Contribution to journal > Meeting Abstract > peer-review

Local adventitial anti-angiogenic gene therapy reduces growth of vasa-vasorum and in-stent restenosis in WHHL rabbits

Hytonen, J. P., Taavitsainen, J., Laitinen, J. T. T., Partanen, A., Alitalo, K., Leppänen, O. & Ylä-Herttuala, S., Aug 2018, In: *Journal of Molecular and Cellular Cardiology*. 121, p. 145-154 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

Article has an altmetric score of 1

Mechanosensing by beta 1 integrin induces angiocrine signals for liver growth and survival

Lorenz, L., Axnick, J., Buschmann, T., Henning, C., Urner, S., Fang, S., Nurmi, H., Eichhorst, N., Holtmeier, R., Bodis, K., Hwang, J-H., Müssig, K., Eberhard, D., Stypmann, J., Kuss, O., Roden, M., Alitalo, K., Häussinger, D. & Lammert, E., 4 Oct 2018, In: *Nature*. 562, 7725, p. 128-+ 18 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 81

Oncogene amplification: Myc and neu oncoproteins

Saksela, K., Koskinen, P., Hirvonen, H., Lehtväslaiho, H., Mäkelä, T. P. & Alitalo, K., 2018, Growth Regulation and Carcinogenesis. Paukovits, W. R. (ed.). Boca Raton: CRC press, Vol. 1. p. 153-174

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

PROX1 is a transcriptional regulator of MMP14

Gramolelli, S., Cheng, J., Martinez-Corral, I., Vähä-Koskela, M., Elbasani, E., Kaivanto, E., Rantanen, V., Tuohinto, K., Hautaniemi, S., Bower, M., Haglund, C., Alitalo, K., Mäkinen, T., Petrova, T. V., Lehti, K. & Ojala, P. M., 22 Jun 2018, In: Scientific Reports. 8, 13 p., 9531.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 19

Stimulation and Inhibition of Lymphangiogenesis Via Adeno-Associated Viral Gene Delivery

Karaman, S., Nurmi, H., Antila, S. & Alitalo, K., 22 Sep 2018, Lymphangiogenesis: Methods and Protocols. Oliver, G. & Kahn, M. (eds.). 1st ed. ed. Humana press, p. 291-300 10 p. (Methods in Molecular Biology; no. 1846).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

Transcription Factor PROX1 Suppresses Notch Pathway Activation via the Nucleosome Remodeling and Deacetylase Complex in Colorectal Cancer Stem-like Cells

Högström, J., Heino, S., Kallio, P., Lähde, M., Leppänen, V-M., Balboa, D., Wiener, Z. & Alitalo, K., 15 Oct 2018, In: Cancer Research. 78, 20, p. 5820-5832 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

uPARAP/Endo180 receptor is a gatekeeper of VEGFR-2/VEGFR-3 heterodimerisation during pathological lymphangiogenesis

Durre, T., Morfioise, F., Erpicum, C., Ebroin, M., Blacher, S., Garcia-Caballero, M., Deroanne, C., Louis, T., Balsat, C., Van de Velde, M., Kaijalainen, S., Kridelka, F., Engelholm, L., Struman, I., Alitalo, K., Behrendt, N., Paupert, J. & Noel, A., 5 Dec 2018, In: Nature Communications. 9, 16 p., 5178.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 11

Vascular endothelial growth factor signaling in development and disease

Karaman, S., Leppänen, V-M. & Alitalo, K., 15 Jul 2018, In: Development. 145, 14, 8 p., 151019.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 10

VEGF-C promotes the development of lymphatics in bone and bone loss

Hominick, D., Silva, A., Khurana, N., Liu, Y., Dechow, P. C., Feng, J. Q., Pytowski, B., Rutkowski, J. M., Alitalo, K. & Dellinger, M. T., 5 Apr 2018, In: eLife. 7, 22 p., 34323.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 12

2017

Adventitial lymphatic capillary expansion impacts on plaque T cell accumulation in atherosclerosis
Rademakers, T., van der Vorst, E. P. C., Daissormont, I. T. M. N., Otten, J. J. T., Theodorou, K.,
Theelen, T. L., Gijbels, M., Anisimov, A., Nurmi, H., Lindeman, J. H. N., Schober, A., Heeneman, S.,
Alitalo, K. & Biessen, E. A. L., 28 Mar 2017, In: Scientific Reports. 7, 10 p., 45263.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 3

Development and plasticity of meningeal lymphatic vessels

Antila, S., Karaman, S., Nurmi, H., Airavaara, M., Voutilainen, M. H., Mathivet, T., Chilov, D., Li,
Z., Koppinen, T., Park, J-H., Fang, S., Aspelund, A., Saarma, M., Eichmann, A., Thomas, J-L. &
Alitalo, K., Dec 2017, In: Journal of Experimental Medicine. 214, 12, p. 3645-3667 23 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Article has an altmetric score of 39

Efficient activation of the lymphangiogenic growth factor VEGF-C requires the C-terminal domain of
VEGF-C and the N-terminal domain of CCBE1

Jha, S. K., Rauniyar, K., Kärpänen, T., Leppänen, V-M., Brouillard, P., Vikkula, M., Alitalo, K. &
Jeltsch, M., 7 Jul 2017, In: Scientific Reports. 7, 13 p., 4916.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 5

Fighting vessel dysmorphia to improve glioma chemotherapy

Lohela, M. & Alitalo, K., Dec 2017, In: EMBO molecular medicine. 9, 12, p. 1626-1628 3 p.

Research output: Contribution to journal › Editorial › Scientific

Open AccessFile

Article has an altmetric score of 4

Lymphangiogenesis guidance by paracrine and pericellular factors

Vaahomeri, K., Karaman, S., Makinen, T. & Alitalo, K., 15 Aug 2017, In: Genes & Development.
31, 16, p. 1615-1634 20 p.

Research output: Contribution to journal › Review Article › peer-review

Open AccessFile

Article has an altmetric score of 4

Midkine and Melanoma Metastasis: A Malevolent Mix

Karaman, S. & Alitalo, K., 7 Aug 2017, In: Developmental Cell. 42, 3, p. 205-207 4 p.

Research output: Contribution to journal › Article › Scientific

Open AccessFile

Article has an altmetric score of 1

ORAI1 Controls the Unique Adjustment of Lymphatics to Fluid Flow

Karaman, S. & Alitalo, K., 28 Apr 2017, In: Circulation Research. 120, 9, p. 1373-1375 3 p.

Research output: Contribution to journal › Article › Scientific

Open Access

Article has an altmetric score of 2

Retrograde Lymph Flow Leads to Chylothorax in Transgenic Mice with Lymphatic Malformations

Nitschke, M., Bell, A., Karaman, S., Amouzgar, M., Rutkowski, J. M., Scherer, P. E., Alitalo, K. &
McDonald, D. M., Sep 2017, In: The American Journal of Pathology. 187, 9, p. 1984-1997 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 5

SnapShot: Angiopoietins and Their Functions

Saharinen, P., Leppanen, V-M. & Alitalo, K., 19 Oct 2017, In: Cell. 171, 3, p. 724-+ 2 p.

Research output: Contribution to journal › Editorial › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 2

Structural basis of Tie2 activation and Tie2/Tie1 heterodimerization

Leppanen, V-M., Saharinen, P. & Alitalo, K., 25 Apr 2017, In: Proceedings of the National Academy of Sciences of the United States of America. 114, 17, p. 4376-4381 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Article has an altmetric score of 7

Therapeutic targeting of the angiopoietin-TIE pathway

Saharinen, P., Eklund, L. & Alitalo, K., Sep 2017, In: Nature reviews. Drug discovery. 16, 9, p. 635-+ 27 p.

Research output: Contribution to journal › Review Article › peer-review

Understanding the functions and relationships of the glymphatic system and meningeal lymphatics

Louveau, A., Plog, B. A., Antila, S., Alitalo, K., Nedergaard, M. & Kipnis, J., 1 Sep 2017, In: Journal of Clinical Investigation. 127, 9, p. 3210-3219 10 p.

Research output: Contribution to journal › Review Article › peer-review

Open Access

Article has an altmetric score of 26

Vascular Endothelial Growth Factor-B Induces a Distinct Electrophysiological Phenotype in Mouse Heart

Naumenko, N., Huusko, J., Tuomainen, T., Koivumaki, J. T., Merentie, M., Gurzeler, E., Alitalo, K., Kivela, R., Yla-Herttuala, S. & Tavi, P., 31 May 2017, In: Frontiers in Physiology. 8, 10 p., 373.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 3

VEGFR2 but not VEGFR3 governs integrity and remodeling of thyroid angiofollicular unit in normal state and during goitrogenesis

Jang, J. Y., Choi, S. Y., Park, I., Park, D. Y., Choe, K., Kim, P., Kim, Y. K., Lee, B-J., Hirashima, M., Kubota, Y., Park, J-W., Cheng, S-Y., Nagy, A., Park, Y. J., Alitalo, K., Shong, M. & Koh, G. Y., Jun 2017, In: EMBO molecular medicine. 9, 6, p. 750-769 20 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 49

VEGFR3 Modulates Vascular Permeability by Controlling VEGF/VEGFR2 Signaling

Heinolainen, K., Karaman, S., D'Amico, G., Tammela, T., Sormunen, R., Eklund, L., Alitalo, K. & Zarkada, G., 28 Apr 2017, In: Circulation Research. 120, 9, p. 1414-+ 19 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Article has an altmetric score of 5

White adipose tissue coloring by intermittent fasting

Kivela, R. & Alitalo, K., Nov 2017, In: Cell Research. 27, 11, p. 1300-1301 2 p.

Research output: Contribution to journal › Editorial › Scientific

Open Access

Article has an altmetric score of 2

2016

Angiopoietin receptor Tie2 is required for vein specification and maintenance via regulating COUP-TFII

Chu, M., Li, T., Shen, B., Cao, X., Zhong, H., Zhang, L., Zhou, F., Ma, W., Jiang, H., Xie, P., Liu, Z., Dong, N., Xu, Y., Zhao, Y., Xu, G., Lu, P., Luo, J., Wu, Q., Alitalo, K., Koh, G. Y., & 2 others, 22 Dec 2016, In: *eLife*. 5, 16 p., 21032.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 4

Critical requirement of VEGF-C in transition to fetal erythropoiesis

Fang, S., Nurmi, H., Heinolainen, K., Chen, S., Salminen, E., Saharinen, P., Mikkola, H. K. A. & Alitalo, K., 4 Aug 2016, In: *Blood*. 128, 5, p. 710-720 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 2

Elevated VEGF-D Modulates Tumor Inflammation and Reduces the Growth of Carcinogen-Induced Skin Tumors

Honkanen, H-K., Izzi, V., Petaisto, T., Holopainen, T., Harjunen, V., Pihlajaniemi, T., Alitalo, K. & Heljasvaara, R., Jul 2016, In: *NeoPlasia*. 18, 7, p. 436-446 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

Functional Importance of a Proteoglycan Coreceptor in Pathologic Lymphangiogenesis

Johns, S. C., Yin, X., Jeltsch, M., Bishop, J. R., Schuksz, M., El Ghazal, R., Wilcox-Adelman, S. A., Alitalo, K. & Fuster, M. M., 8 Jul 2016, In: *Circulation Research*. 119, 2, p. 210-+ 24 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

Ischemia-Reperfusion Injury Enhances Lymphatic Endothelial VEGFR3 and Rejection in Cardiac Allografts

Dashkevich, A., Raissadati, A., Syrjala, S. O., Zarkada, G., Keranen, M. A. I., Tuuminen, R., Krebs, R., Anisimov, A., Jeltsch, M., Leppanen, V. -M., Alitalo, K., Nykanen, A. I. & Lemstrom, K. B., Apr 2016, In: *American Journal of Transplantation*. 16, 4, p. 1160-1172 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Article has an altmetric score of 3

Lymphatic System in Cardiovascular Medicine

Aspelund, A., Robciuc, M. R., Karaman, S., Makinen, T. & Alitalo, K., 5 Feb 2016, In: *Circulation Research*. 118, 3, p. 515-530 16 p.

Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 8

Lymphatic vessels regulate immune microenvironments in human and murine melanoma

Lund, A. W., Wagner, M., Fankhauser, M., Steinskog, E. S., Broggi, M. A., Sprenger, S., Gajewski, T. F., Alitalo, K., Eikesdal, H. P., Wiig, H. & Swartz, M. A., Sep 2016, In: *Journal of Clinical Investigation*. 126, 9, p. 3389-3402 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 9

Opposing actions of angiopoietin-2 on Tie2 signaling and FOXO1 activation

Kim, M., Allen, B., Korhonen, E. A., Nitschke, M., Yang, H. W., Baluk, P., Saharinen, P., Alitalo, K., Daly, C., Thurston, G. & McDonald, D. M., Sep 2016, In: *Journal of Clinical Investigation*. 126, 9, p. 3511-3525 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Proteolytic activation defines distinct lymphangiogenic mechanisms for VEGFC and VEGFD

Bui, H. M., Enis, D., Robciuc, M. R., Nurmi, H. J., Cohen, J., Chen, M., Yang, Y., Dhillon, V., Johnson, K., Zhang, H., Kirkpatrick, R., Traxler, E., Anisimov, A., Alitalo, K. & Kahn, M. L., 2016, In: *Journal of Clinical Investigation*. 126, 6, p. 2167-2180 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

PROX1 and beta-catenin are prognostic markers in pancreatic ductal adenocarcinoma

Saukkonen, K., Hagstrom, J., Mustonen, H., Juuti, A., Nordling, S., Kallio, P., Alitalo, K., Seppanen, H. & Haglund, C., 13 Jul 2016, In: *BMC Cancer*. 16, 12 p., 472.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

Simultaneous targeting of VEGF-receptors 2 and 3 with immunoliposomes enhances therapeutic efficacy

Orleth, A., Mamot, C., Rochlitz, C., Ritschard, R., Alitalo, K., Christofori, G. & Wicki, A., 2 Jan 2016, In: *Journal of Drug Targeting*. 24, 1, p. 80-89 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

The transcription factor Prox1 is essential for satellite cell differentiation and muscle fibre-type regulation

Kivela, R., Salmela, I., Nguyen, Y. H., Petrova, T. V., Koistinen, H. A., Wiener, Z. & Alitalo, K., 12 Oct 2016, In: *Nature Communications*. 7, 11 p., 13124.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 79

Tie1 controls angiopoietin function in vascular remodeling and inflammation

Korhonen, E. A., Lampinen, A., Giri, H., Anisimov, A., Kim, M., Allen, B., Fang, S., D'Amico, G., Sipila, T. J., Lohela, M., Strandin, T., Vaheri, A., Yla-Herttuala, S., Koh, G. Y., McDonald, D. M., Alitalo, K. & Saharinen, P., Sep 2016, In: *Journal of Clinical Investigation*. 126, 9, p. 3495-3510 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 7

Transgenic overexpression of VEGF-C induces weight gain and insulin resistance in mice

Karaman, S., Hollmen, M., Yoon, S.-Y., Alkan, H. F., Alitalo, K., Wolfrum, C. & Detmar, M., 11 Aug 2016, In: *Scientific Reports*. 6, 12 p., 31566.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 3

VEGFB/VEGFR1-Induced Expansion of Adipose Vasculature Counteracts Obesity and Related Metabolic Complications

Robciuc, M. R., Kivela, R., Williams, I. M., de Boer, J. F., van Dijk, T. H., Elamaa, H., Tigistu-Sahle, F., Molotkov, D., Leppanen, V.-M., Kakela, R., Eklund, L., Wasserman, D. H., Groen, A. K. & Alitalo, K., 12 Apr 2016, In: *Cell Metabolism*. 23, 4, p. 712-724 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Article has an altmetric score of 41

VEGF-B gene therapy inhibits doxorubicin-induced cardiotoxicity by endothelial protection

Rasanen, M., Degerman, J., Nissinen, T. A., Miinalainen, I., Kerkela, R., Siltanen, A., Backman, J. T., Mervaala, E., Hulmi, J., Kivela, R. & Alitalo, K., 15 Nov 2016, In: *Proceedings of the National Academy of Sciences of the United States of America*. 113, 46, p. 13144-13149 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Article has an altmetric score of 51

2015

A dural lymphatic vascular system that drains brain interstitial fluid and macromolecules

Aspelund, A., Antila, S., Proulx, S. T., Karlsen, T. V., Karaman, S., Detmar, M., Wiig, H. & Alitalo, K., 29 Jun 2015, In: *Journal of Experimental Medicine*. 212, 7, p. 991-999 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 234

Angiopoietin-2 blocking antibodies reduce early atherosclerotic plaque development in mice

Theelen, T. L., Lappalainen, J. P., Sluimer, J. C., Gurzeler, E., Cleutjens, J. P., Gijbels, M. J., Biessen, E. A. L., Daemen, M. J. A. P., Alitalo, K. & Yla-Herttuala, S., Aug 2015, In: *Atherosclerosis*. 241, 2, p. 297-304 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Assessment of tumour viability in human lung cancer xenografts with texture-based image analysis

Turkki, R., Linder, N., Holopainen, T., Wang, Y., Grote, A., Lundin, M., Alitalo, K. & Lundin, J., Aug 2015, In: *Journal of Clinical Pathology*. 68, 8, p. 614-621 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Blockade of VEGF-C and VEGF-D modulates adipose tissue inflammation and improves metabolic parameters under high-fat diet

Karaman, S., Hollmen, M., Robciuc, M. R., Alitalo, A., Nurmi, H., Morf, B., Buschle, D., Alkan, H. F., Ochsenbein, A. M., Alitalo, K., Wolfrum, C. & Detmar, M., Feb 2015, In: *Molecular metabolism*. 4, 2, p. 93-105 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

cKit Lineage Hemogenic Endothelium-Derived Cells Contribute to Mesenteric Lymphatic Vessels

Stanczuk, L., Martinez-Corral, I., Ulvmar, M. H., Zhang, Y., Lavina, B., Fruttiger, M., Adams, R. H., Saur, D., Betsholtz, C., Ortega, S., Alitalo, K., Graupera, M. & Makinen, T., 17 Mar 2015, In: *Cell Reports*. 10, 10, p. 1708-1721 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 24

Donor Heart Treatment With COMP-Ang1 Limits Ischemia-Reperfusion Injury and Rejection of Cardiac Allografts

Syrjala, S. O., Nykänen, A. I., Tuuminen, R., Raissadati, A., Keränen, M. A. I., Arnaudova, R., Krebs, R., Koh, G. Y., Alitalo, K. & Lemstrom, K. B., Aug 2015, In: American Journal of Transplantation. 15, 8, p. 2075-2084 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 2

Endothelial Bmx tyrosine kinase activity is essential for myocardial hypertrophy and remodeling
Holopainen, T., Rasanen, M., Anisimov, A., Tuomainen, T., Zheng, W., Tvorogov, D., Hulmi, J. J., Andersson, L. C., Cenni, B., Tavi, P., Mervaala, E., Kivela, R. & Alitalo, K., 20 Oct 2015, In: Proceedings of the National Academy of Sciences of the United States of America. 112, 42, p. 13063-13068 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Endothelial destabilization by angiopoietin-2 via integrin beta 1 activation

Hakanpää, L., Sipilä, T., Leppanen, V-M., Gautam, P., Nurmi, H., Jacquemet, G., Eklund, L., Ivaska, J., Alitalo, K. & Saharinen, P., Jan 2015, In: Nature Communications. 6, 12 p., 5962.

Research output: Contribution to journal › Article › Scientific › peer-review

Functional Dissection of the CCBE1 Protein A Crucial Requirement for the Collagen Repeat Domain

Roukens, M. G., Peterson-Maduro, J., Padberg, Y., Jeltsch, M., Leppanen, V-M., Bos, F. L., Alitalo, K., Schulte-Merker, S. & Schulte, D., 8 May 2015, In: Circulation Research. 116, 10, p. 1660-U153 22 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Growth factor therapy and lymph node graft for lymphedema

Tervala, T. V., Hartiala, P., Tammela, T., Visuri, M. T., Ylä-Herttuala, S., Alitalo, K. & Saarikko, A. M., 1 Jun 2015, In: Journal of Surgical Research. 196, 1, p. 200-207 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Intestinal Commitment and Maturation of Human Pluripotent Stem Cells Is Independent of Exogenous FGF4 and R-spondin1

Tamminen, K., Balboa Alonso, D., Toivonen, S., Pakarinen, M. P., Wiener, Z., Alitalo, K. & Otonkoski, T., 31 Jul 2015, In: PLoS One. 10, 7, 19 p., 0134551.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 5

Intravital imaging of intestinal lacteals unveils lipid drainage through contractility

Choe, K., Jang, J. Y., Park, I., Kim, Y., Ahn, S., Park, D-Y., Hong, Y-K., Alitalo, K., Koh, G. Y. & Kim, P., Nov 2015, In: Journal of Clinical Investigation. 125, 11, p. 4042-4052 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 2

Methods and uses related to ADAMTS3

Alitalo, K., Jeltsch, M., Jha, S. K. & Tvorogov, D., 30 Jul 2015, WIPO, Patent No. WO2015/110707, 30 Jul 2015, Priority date 24 Jan 2014, Priority No. 20145073 (FI)

Research output: Patent

File

MMP16 Mediates a Proteolytic Switch to Promote Cell-Cell Adhesion, Collagen Alignment, and Lymphatic Invasion in Melanoma

Tatti, O., Gucciardo, E., Pekkonen, P., Holopainen, T., Louhimo, R., Repo, P., Maliniemi, P., Lohi, J., Rantanen, V., Hautaniemi, S., Alitalo, K., Ranki, A., Ojala, P. M., Keski-Oja, J. & Lehti, K., 15 May 2015, In: *Cancer Research*. 75, 10, p. 2083-2094 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

Nonvenous Origin of Dermal Lymphatic Vasculature

Martinez-Corral, I., Ulvmar, M. H., Stanczuk, L., Tatin, F., Kizhatil, K., John, S. W. M., Alitalo, K., Ortega, S. & Makinen, T., 8 May 2015, In: *Circulation Research*. 116, 10, p. 1649-U117 23 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 20

PROX1 is involved in progression of rectal neuroendocrine tumors, NETs

Jernman, J., Kallio, P., Hagstrom, J., Valimaki, M. J., Haapasalo, H., Alitalo, K., Arola, J. & Haglund, C., Sep 2015, In: *Virchows Archiv*. 467, 3, p. 279-284 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Sufficient Evidence for Lymphatics in the Developing and Adult Human Choroid?

Heindl, L. M., Kaser-Eichberger, A., Schlereth, S. L., Bock, F., Regenfuss, B., Reitsamer, H. A., McMenamin, P., Luttly, G. A., Maruyama, K., Chen, L., Dana, R., Kerjaschki, D., Alitalo, K., De Stefano, M. E., Junghans, B. M., Schroedl, F. & Cursiefen, C., Oct 2015, In: *Investigative Ophthalmology & Visual Science*. 56, 11, p. 6709-6710 2 p.

Research output: Contribution to journal > Article > Scientific

Therapeutic use of VEGF-C and CCBE1

Alitalo, K., Jeltsch, M. & Anisimov, A., 19 Feb 2015, WIPO, Patent No. WO2015/022447, 15 Feb 2015, Priority date 14 Aug 2013, Priority No. 20135832 (FI)

Research output: Patent

File

The TIE Receptor Family

Saharinen, P. I., Jeltsch, M. M., Santoyo, M. M., Leppänen, V-M. & Alitalo, K. K., 2015, *Receptor Tyrosine Kinases: Family and Subfamilies*. Wheeler, D. L. & Yarden, Y. (eds.). Springer-Verlag, p. 743-775 33 p.

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

Open Access

Vascular Endothelial Growth Factor Receptor 3 Controls Neural Stem Cell Activation in Mice and Humans

Han, J., Calvo, C-F., Kang, T. H., Baker, K. L., Park, J-H., Parras, C., Levittas, M., Birba, U., Pibouin-Fragner, L., Fragner, P., Bilguvar, K., Duman, R. S., Nurmi, H. J., Alitalo, K., Eichmann, A. C. & Thomas, J-L., 24 Feb 2015, In: *Cell Reports*. 10, 7, p. 1158-1172 15 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

Article has an altmetric score of 44

VEGF-C and VEGF-C156S in the pro-lymphangiogenic growth factor therapy of lymphedema: a large animal study

Visuri, M. T., Honkonen, K. M., Hartiala, P., Tervala, T. V., Halonen, P. J., Junkkari, H., Knuutinen, N., Yla-Herttuala, S., Alitalo, K. K. & Saarikko, A., Jul 2015, In: *Angiogenesis*. 18, 3, p. 313-326 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

VEGF-C is required for intestinal lymphatic vessel maintenance and lipid absorption

Nurmi, H., Saharinen, P., Zarkada, G., Zheng, W., Robciuc, M. R. & Alitalo, K., Nov 2015, In: EMBO molecular medicine. 7, 11, p. 1418-1425 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 4

VEGFR3 does not sustain retinal angiogenesis without VEGFR2

Zarkada, G., Heinolainen, K., Makinen, T., Kubota, Y. & Alitalo, K., 20 Jan 2015, In: Proceedings of the National Academy of Sciences of the United States of America. 112, 3, p. 761-766 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

2014

Angiopoietin-2 Inhibition Prevents Transplant Ischemia- Reperfusion Injury and Chronic Rejection in Rat Cardiac Allografts

Syrjala, S. O., Tuuminen, R., Nykanen, A. I., Raissadati, A., Dashkevich, A., Keranen, M. A. I., Arnaudova, R., Krebs, R., Leow, C. C., Saharinen, P., Alitalo, K. & Lemstrom, K. B., May 2014, In: American Journal of Transplantation. 14, 5, p. 1096-1108 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Angiopoietin 2 regulates the transformation and integrity of lymphatic endothelial cell junctions

Zheng, W., Nurmi, H., Appak, S., Sabine, A., Bovay, E., Korhonen, E. A., Orsenigo, F., Lohela, M., D'Amico, G., Holopainen, T., Leow, C. C., Dejana, E., Petrova, T. V., Augustin, H. G. & Alitalo, K., 15 Jul 2014, In: Genes & Development. 28, 14, p. 1592-1603 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

CCBE1 Enhances Lymphangiogenesis via A Disintegrin and Metalloprotease With Thrombospondin Motifs-3-Mediated Vascular Endothelial Growth Factor-C Activation

Jeltsch, M., Jha, S. K., Tvorogov, D., Anisimov, A., Leppanen, V-M., Holopainen, T., Kivela, R., Ortega, S., Karpanen, T. & Alitalo, K., 13 May 2014, In: Circulation . 129, 19, p. 1962-1971 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 7

Consensus Statement on the Immunohistochemical Detection of Ocular Lymphatic Vessels

Schroedl, F., Kaser-Eichberger, A., Schlereth, S. L., Bock, F., Regenfuss, B., Reitsamer, H. A., Luttj, G. A., Maruyama, K., Chen, L., Luetjen-Drecoll, E., Dana, R., Kerjaschki, D., Alitalo, K., De Stefano, M. E., Junghans, B. M., Heindl, L. M. & Cursiefen, C., Oct 2014, In: Investigative Ophthalmology & Visual Science. 55, 10, p. 6440-6442 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

HIF-1 alpha and HIF-2 alpha induce angiogenesis and improve muscle energy recovery

Niemi, H., Honkonen, K., Korpisalo, P., Huusko, J., Kansanen, E., Merentie, M., Rissanen, T. T., Andre, H., Pereira, T., Poellinger, L., Alitalo, K. & Yla-Herttuala, S., Oct 2014, In: European Journal of Clinical Investigation. 44, 10, p. 989-999 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Lack of cardiac and high-fat diet induced metabolic phenotypes in two independent strains of Vegf-b knockout mice

Dijkstra, M. H., Pirinen, E., Huusko, J., Kivelä, R., Schenkwein, D., Alitalo, K. & Yla-Herttuala, S., 29 Aug 2014, In: Scientific Reports. 4, 7 p., 6238.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Lymphangiogenic factors, mechanisms, and applications

Zheng, W., Aspelund, A. & Alitalo, K., Mar 2014, In: *Journal of Clinical Investigation*. 124, 3, p. 878-887 10 p.

Research output: Contribution to journal > Review Article > peer-review

Article has an altmetric score of 4

Lymphatic regulator PROX1 determines Schlemm's canal integrity and identity

Park, D.-Y., Lee, J., Park, I., Choi, D., Lee, S., Song, S., Hwang, Y., Hong, K. Y., Nakaoka, Y., Makinen, T., Kim, P., Alitalo, K., Hong, Y.-K. & Koh, G. Y., Sep 2014, In: *Journal of Clinical Investigation*. 124, 9, p. 3960-3974 15 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 11

Lymphatic Vessel Insufficiency in Hypercholesterolemic Mice Alters Lipoprotein Levels and Promotes Atherogenesis

Vuorio, T., Nurmi, H., Moulton, K., Kurkipuro, J., Robciuc, M. R., Öhman, M., Heinonen, S. E., Samaranyake, H., Heikura, T., Alitalo, K. & Yla-Herttuala, S., Jun 2014, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 34, 6, p. 1162-1170 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 2

Oncogenic mutations in intestinal adenomas regulate Bim-mediated apoptosis induced by TGF-beta
Wiener, Z., Band, A. M., Kallio, P., Höglström, J., Hyvönen, V., Kaijalainen, S., Ritvos, O., Haglund, C., Kruuna, O., Robine, S., Louvard, D., Ben-Neriah, Y. & Alitalo, K., 27 May 2014, In: *Proceedings of the National Academy of Sciences of the United States of America*. 111, 21, p. E2229-E2236 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

Prox1 Promotes Expansion of the Colorectal Cancer Stem Cell Population to Fuel Tumor Growth and Ischemia Resistance

Wiener, Z., Hogstrom, J., Hyvonen, V., Band, A. M., Kallio, P., Holopainen, T., Dufva, O., Haglund, C., Kruuna, O., Oliver, G., Ben-Neriah, Y. & Alitalo, K., 25 Sep 2014, In: *Cell Reports*. 8, 6, p. 1943-1956 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

Article has an altmetric score of 42

Pulmonary Lymphangiectasia Resulting From Vascular Endothelial Growth Factor-C Overexpression During a Critical Period

Yao, L.-C., Testini, C., Tvorogov, D., Anisimov, A., Vargas, S. O., Baluk, P., Pytowski, B., Claesson-Welsh, L., Alitalo, K. & McDonald, D. M., 28 Feb 2014, In: *Circulation Research*. 114, 5, p. 806-822 17 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The impact of the receptor binding profiles of the vascular endothelial growth factors on their angiogenic features

Nieminen, T., Toivanen, P. I., Rintanen, N., Heikura, T., Jauhiainen, S., Airene, K. J., Alitalo, K., Marjomaki, V. & Yla-Herttuala, S., Jan 2014, In: *Biochimica et Biophysica Acta. General Subjects*. 1840, 1, p. 454-463 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

The Prox1-Vegfr3 feedback loop maintains the identity and the number of lymphatic endothelial cell progenitors

Srinivasan, R. S., Escobedo, N., Yang, Y., Interiano, A., Dillard, M. E., Finkelstein, D., Mukatira, S., Gil, H. J., Nurmi, H., Alitalo, K. & Oliver, G., 1 Oct 2014, In: *Genes & Development*. 28, 19, p. 2175-2187 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The Schlemm's canal is a VEGF-C/VEGFR-3-responsive lymphatic-like vessel

Aspelund, A., Tammela, T., Antila, S., Nurmi, H. J., Leppanen, V-M., Zarkada, G., Stanczuk, L., Francois, M., Makinen, T., Saharinen, P., Immonen, I. & Alitalo, K., Sep 2014, In: *Journal of Clinical Investigation*. 124, 9, p. 3975-3986 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 11

The sinus venosus contributes to coronary vasculature through VEGFC-stimulated angiogenesis

Chen, H. I., Sharma, B., Akerberg, B. N., Numi, H. J., Kivela, R., Saharinen, P., Aghajanian, H., McKay, A. S., Bogard, P. E., Chang, A. H., Jacobs, A. H., Epstein, J. A., Stankunas, K., Alitalo, K. & Red-Horse, K., Dec 2014, In: *Development*. 141, 23, p. 4500-4512 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 8

Tie1 deletion inhibits tumor growth and improves angiopoietin antagonist therapy

D'Amico, G., Korhonen, E. A., Anisimov, A., Zarkada, G., Holopainen, T., Haegerling, R., Kiefer, F., Eklund, L., Sormunen, R., Elamaa, H., Brekken, R. A., Adams, R. H., Koh, G. Y., Saharinen, P. & Alitalo, K., Feb 2014, In: *Journal of Clinical Investigation*. 124, 2, p. 824-834 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 10

VASCULAR ENDOTHELIAL GROWTH FACTOR-B IN PHYSIOLOGY AND DISEASE

Bry, M., Kivela, R., Leppanen, V-M. & Alitalo, K., 1 Jul 2014, In: *Physiological Reviews*. 94, 3, p. 779-794 16 p.

Research output: Contribution to journal > Review Article > peer-review

VEGF-B-induced vascular growth leads to metabolic reprogramming and ischemia resistance in the heart

Kivelä, M. R., Bry, M., Robciuc, M. R., Räsänen, M., Taavitsainen, M., Silvola, J. M. U., Saraste, A., Hulmi, J. J., Anisimov, A., Mayranpaa, M. I., Lindeman, J. H., Eklund, L., Hellberg, S., Hlushchuk, R., Zhuang, Z. W., Simons, M., Djonov, V., Knuuti, J., Mervaala, E. & Alitalo, K., Mar 2014, In: *EMBO molecular medicine*. 6, 3, p. 307-321 15 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

VEGF-C and aortic cardiomyocytes guide coronary artery stem development

Chen, H. I., Poduri, A., Numi, H., Kivela, R., Saharinen, P., McKay, A. S., Raftrey, B., Churko, J., Tian, X., Zhou, B., Wu, J. C., Alitalo, K. & Red-Horse, K., Nov 2014, In: *Journal of Clinical Investigation*. 124, 11, p. 4899-4914 16 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 2

2013

Activation of Hypoxia Response in Endothelial Cells Contributes to Ischemic Cardioprotection

Kerkela, R., Karsikas, S., Szabo, Z., Serpi, R., Magga, J., Gao, E., Alitalo, K., Anisimov, A., Sormunen, R., Pietila, I., Vainio, L., Koch, W. J., Kivirikko, K. I., Myllyharju, J. & Koivunen, P., Aug 2013, In: *Molecular and Cellular Biology*. 33, 16, p. 3321-3329 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

A novel multistep mechanism for initial lymphangiogenesis in mouse embryos based on ultramicroscopy

Haegerling, R., Pollmann, C., Andreas, M., Schmidt, C., Nurmi, H., Adams, R. H., Alitalo, K., Andresen, V., Schulte-Merker, S. & Kiefer, F., 6 Mar 2013, In: *EMBO Journal*. 32, 5, p. 629-644 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 5

A Senescence-Inflammatory Switch from Cancer-Inhibitory to Cancer-Promoting Mechanism

Pribluda, A., Elyada, E., Wiener, Z., Hamza, H., Goldstein, R. E., Biton, M., Burstain, I., Morgenstern, Y., Brachya, G., Billauer, H., Biton, S., Snir-Alkalay, I., Vucic, D., Schlereth, K., Mernberger, M., Stiewe, T., Oren, M., Alitalo, K., Pikarsky, E. & Ben-Neriah, Y., 12 Aug 2013, In: *Cancer Cell*. 24, 2, p. 242-256 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 11

A truncation allele in vascular endothelial growth factor c reveals distinct modes of signaling during lymphatic and vascular development

Villefranc, J. A., Nicoli, S., Bentley, K., Jeltsch, M., Zarkada, G., Moore, J. C., Gerhardt, H., Alitalo, K. & Lawson, N. D., 1 Apr 2013, In: *Development*. 140, 7, p. 1497-1506 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Comparison of vascular growth factors in the murine brain reveals placenta growth factor as prime candidate for CNS revascularization

Gaal, E. I., Tammela, T., Anisimov, A., Marbacher, S., Honkanen, P., Zarkada, G., Leppänen, V-M., Tatlisumak, T., Hernesniemi, J., Niemelä, M. & Alitalo, K., 1 Aug 2013, In: *Blood*. 122, 5, p. 658-665 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

European Perspectives in Cardiology

Alitalo, K., 28 May 2013, In: *Circulation*. 127, 21, p. F121-F126 6 p.

Research output: Contribution to journal › Article › Scientific

Ex vivo intracoronary gene transfer of adeno-associated virus 2 leads to superior transduction over serotypes 8 and 9 in rat heart transplants

Raissadati, A., Jokinen, J. J., Syrjala, S. O., Keränen, M. A. I., Krebs, R., Tuuminen, R., Arnaudova, R., Rouvinen, E., Anisimov, A., Soronen, J., Pajusola, K., Alitalo, K., Nykänen, A. I. & Lemström, K. B., Nov 2013, In: *Transplant International*. 26, 11, p. 1126-1137 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Immune cells control skin lymphatic electrolyte homeostasis and blood pressure

Wiig, H., Schroeder, A., Neuhofer, W., Jantsch, J., Kopp, C., Karlsen, T. V., Boschmann, M., Goss, J., Bry, M., Rakova, N., Dahlmann, A., Brenner, S., Tenstad, O., Nurmi, H., Mervaala, E., Wagner, H., Beck, F-X., Mueller, D. N., Kerjaschki, D., Luft, F. C., & 3 others, Jul 2013, In: *Journal of Clinical Investigation*. 123, 7, p. 2803-2815 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 51

Increased Interstitial Protein Because of Impaired Lymph Drainage Does Not Induce Fibrosis and Inflammation in Lymphedema

Markhus, C. E., Karlsen, T. V., Wagner, M., Svendsen, O. S., Tenstad, O., Alitalo, K. & Wiig, H., 1 Feb 2013, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 33, 2, p. 266-274 9 p.
Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Interactions between VEGFR and Notch signaling pathways in endothelial and neural cells
Thomas, J-L., Baker, K., Han, J., Calvo, C., Nurmi, H., Eichmann, A. C. & Alitalo, K., May 2013, In: *Cellular and Molecular Life Sciences*. 70, 10, p. 1779-1792 14 p.
Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 1

Lymph Node Transfer and Perinodal Lymphatic Growth Factor Treatment for Lymphedema
Honkonen, K. M., Visuri, M. T., Tervala, T. V., Halonen, P. J., Koivisto, M., Lahtenvuo, M. T., Alitalo, K. K., Yla-Herttuala, S. & Saaristo, A. M., May 2013, In: *Annals of Surgery*. 257, 5, p. 961-967 7 p.
Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 5

Mouse models for studying angiogenesis and lymphangiogenesis in cancer
Eklund, L., Bry, M. & Alitalo, K., Apr 2013, In: *Molecular oncology*. 7, 2, p. 259-282 24 p.
Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 1

Neuropilin-2 and vascular endothelial growth factor receptor-3 are up-regulated in human vascular malformations
Partanen, T. A., Vuola, P., Jauhiainen, S., Lohi, J., Salminen, P., Pitkaranta, A., Hakkinen, S-K., Honkonen, K., Alitalo, K. & Yla-Herttuala, S., 1 Jan 2013, In: *Angiogenesis*. 16, 1, p. 137-146 10 p.
Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

PHD2 regulates arteriogenic macrophages through TIE2 signalling
Hamm, A., Veschini, L., Takeda, Y., Costa, S., Delamarre, E., Squadrito, M. L., Henze, A-T., Wenes, M., Serneels, J., Pucci, F., Roncal, C., Anisimov, A., Alitalo, K., De Palma, M. & Mazzone, M., Jun 2013, In: *EMBO molecular medicine*. 5, 6, p. 843-857 15 p.
Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

Preclinical Safety, Toxicology, and Biodistribution Study of Adenoviral Gene Therapy with sVEGFR-2 and sVEGFR-3 Compined with Chemotherapy for Ovarian Cancer
Tuppurainen, L., Sallinen, H., Kokki, E., Koponen, J., Anttila, M., Pulkkinen, K., Heikura, T., Toivanen, P., Hämäläinen, K., Kosma, V-M., Heinonen, S., Alitalo, K. & Ylä-Herttuala, S., 2013, In: *Human Gene Therapy*. 24, 1, p. 29-37 8 p.
Research output: Contribution to journal › Article › Scientific › peer-review

2013

Receptor Tyrosine Kinase-Mediated Angiogenesis
Jeltsch, M., Leppänen, V-M., Saharinen, P. & Alitalo, K., Sep 2013, In: *Cold Spring Harbor Perspectives in Biology*. 5, 9, p. Article Number: a009183 22 p.
Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Structural and mechanistic insights into VEGF receptor 3 ligand binding and activation

Leppänen, V-M., Tvorogov, D., Kisko, K., Prota, A. E., Jeltsch, M., Anisimov, A., Markovic-Mueller, S., Stuttfeld, E., Goldie, K. N., Ballmer-Hofer, K. & Alitalo, K., 6 Aug 2013, In: Proceedings of the National Academy of Sciences of the United States of America. 110, 32, p. 12960-12965 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

The Basis for the Distinct Biological Activities of Vascular Endothelial Growth Factor Receptor-1 Ligands

Anisimov, A., Leppanen, V-M., Tvorogov, D., Zarkada, G., Jeltsch, M., Holopainen, T., Kaijalainen, S. & Alitalo, K., 2 Jul 2013, In: Science signaling. 6, 282, p. ra52 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 5

The parallel growth of motoneuron axons with the dorsal aorta depends on Vegfc/Vegfr3 signaling in zebrafish

Kwon, H-B., Fukuhara, S., Asakawa, K., Ando, K., Kashiwada, T., Kawakami, K., Hibi, M., Kwon, Y-G., Kim, K-W., Alitalo, K. & Mochizuki, N., 1 Oct 2013, In: Development. 140, 19, p. 4081-4090 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Transgenic Overexpression of Interleukin-1 beta Induces Persistent Lymphangiogenesis But Not Angiogenesis in Mouse Airways

Baluk, P., Hogmalm, A., Bry, M., Alitalo, K., Bry, K. & McDonald, D. M., Apr 2013, In: The American Journal of Pathology. 182, 4, p. 1434-1447 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Use of VEGF-D gene to prevent restenosis

Alitalo, K. K., Ylä-Herttuala, S., Hiltunen, M., Jeltsch, M. M. & Achen, M. G., 4 Jun 2013, US Patent and Trademark Office, Patent No. US 8,455,453 B2, 4 Jun 2013, Priority date 26 Oct 1998, Priority No. 60/105,587

Research output: Patent

Open AccessFile

Vascular Endothelial Growth Factor-Angiopoietin Chimera With Improved Properties for Therapeutic Angiogenesis

Anisimov, A., Tvorogov, D., Alitalo, A., Leppänen, V-M., An, Y., Han, E. C., Orsenigo, F., Gaal, E. I., Holopainen, T., Koh, Y. J., Tammela, T., Korpisalo, P., Kesitalo, S., Jeltsch, M., Yla-Herttuala, S., Dejana, E., Koh, G. Y., Choi, C., Saharinen, P. & Alitalo, K., 2013, In: Circulation . 127, 4, p. 424-434 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

VEGF-A regulated by progesterone governs uterine angiogenesis and vascular remodelling during pregnancy

Kim, M., Park, H. J., Seol, J. W., Jang, J. Y., Cho, Y-S., Kim, K. R., Choi, Y., Lydon, J. P., DeMayo, F. J., Shibuya, M., Ferrara, N., Sung, H-K., Nagy, A., Alitalo, K. & Koh, G. Y., Sep 2013, In: EMBO molecular medicine. 5, 9, p. 1415-1430 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

2012

AAV9-mediated VEGF-B Gene Transfer Improves Systolic Function in Progressive Left Ventricular Hypertrophy

Huusko, J., Lottonen, L., Merentie, M., Gurzeler, E., Anisimov, A., Miyanojara, A., Alitalo, K., Tavi, P. & Yla-Herttuala, S., Dec 2012, In: Molecular therapy. 20, 12, p. 2212-2221 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 4

Aberrant mural cell recruitment to lymphatic vessels and impaired lymphatic drainage in a murine model of pulmonary fibrosis.

Mainecke, A-K., Nagy, N., D'Amico, G., Kirmse, S., Klose, R., Schrödter, K., Zimmermann, A., Helfrich, I., Rundqvist, H., Theegarten, D., Anhehn, O., Orian-Rousseau, V., Johnson, R. S., Alitalo, K., Fischer, J. W., Fandrey, J. & Stockmann, C., 14 Jun 2012, In: Blood. 119, 24, p. 5931-5942 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

Angiopoietin-Like 4 Mediates PPAR Delta Effect on Lipoprotein Lipase-Dependent Fatty Acid Uptake but Not on Beta-Oxidation in Myotubes

Robciuc, M. R., Skrobuk, P., Anisimov, A., Olkkonen, V., Alitalo, K., Eckel, R., Koistinen, H. A., Jauhainen, M. & Ehnholm, C., 4 Oct 2012, In: PLoS One. 7, 10, p. e46212 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

Antiangiogenic gene therapy with soluble VEGF-receptors -1, -2 and -3 together with paclitaxel prolongs survival of mice with human ovarian carcinoma

Sopo, M., Anttila, M., Sallinen, H., Tuppurainen, L., Laurema, A., Laidinen, S., Hämäläinen, K., Tuunanen, P., Koponen, J. K., Kosma, V-M., Heinonen, S., Alitalo, K. & Yli-Herttuala, S., 15 Feb 2012, In: International Journal of Cancer. 131, 10, p. 2394-2401 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

A radical view of pathological vasculature

Alitalo, K., 5 Sep 2012, In: Cell Metabolism. 16, 3, p. 287-288 2 p.

Research output: Contribution to journal > Review Article > peer-review

Article has an altmetric score of 2

Blocking Fibroblast Growth Factor Receptor Signaling Inhibits Tumor Growth, Lymphangiogenesis, and Metastasis

Larrieu-Lahargue, F., L. Welm, A., Bouchecareilh, M., Alitalo, K., Y. Li, D., Bikfalvi, A. & Auguste, P., 25 Jun 2012, In: PLoS One. 7, 6, p. Article Number: e39540 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

Article has an altmetric score of 2

Deletion of the endothelial Bmx tyrosine kinase decreases tumor angiogenesis and growth.

Holopainen, T. T., López Alpuche, V., Zheng, W., Heljasvaara, R., Jones, D., He, Y., Tvorogov, D., D Amico Lago, G. V., Wiener, Z., Andersson, L. C., Pihlajaniemi, T., Min, W. & Alitalo, K., 15 Jul 2012, In: Cancer Research. 72, 14, p. 3512-3521 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Effects of angiopoietin-2-blocking antibody on endothelial cell-cell junctions and lung metastasis

Holopainen, T. T., Saharinen, P. I., D Amico Lago, G. V., Lampinen, A., Eklund, L., Sormunen, R., Anisimov, A., Zarkada, G., Lohela, M. K., Heloterä, H., Tammela, T., Benjamin, L., Ylä-Herttuala, S., Leow, C. C., Koh, G. Y. & Alitalo, K., 21 Mar 2012, In: Journal of the National Cancer Institute. 104, 6, p. 461-475 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 7

Essential Role of the Coxsackie - and Adenovirus Receptor (CAR) in Development of the Lymphatic System in Mice.

Mirza, M., Pang, M-F., Zaini, M. A., Haiko, P. I., Tammela, T., Fuxe, J., Sollerbrant, K., Philipson, L. & Alitalo, K., 18 May 2012, In: PLoS One. 7, 5, p. e37523 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 1

Gene-Targeting of Phd2 Improves Tumor Response to Chemotherapy and Prevents Side-Toxicity

de Oliveira, R. L., Deschoemaeker, S., Henze, A-T., Debackere, K., Finisguerra, V., Takeda, Y., Roncal, C., Dettori, D., Tack, E., Jönsson, Y., Veschini, L., Peeters, A., Anisimov, A., Hofmann, M., Alitalo, K., Baes, M., D'hooge, J., Carmeliet, P. & Mazzone, M., 14 Aug 2012, In: Cancer Cell. 22, 2, p. 263-277 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 5

Impaired Humoral Immunity and Tolerance in K14-VEGFR-3-Ig Mice That Lack Dermal Lymphatic Drainage

Thomas, S. N., Rutkowski, J. M., Pasquier, M., Kuan, E. L., Alitalo, K., Randolph, G. J. & Swartz, M. A., 27 Jul 2012, In: Journal of Immunology. 189, 5, p. 2181-2190 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Induced Pluripotent Stem Cell Clones Reprogrammed via Recombinant Adeno-Associated Virus-Mediated Transduction Contain Integrated Vector Sequences

Weltner, J., Anisimov, A., Alitalo, K., Otonkoski, T. & Trokovic, R., 2012, In: Journal of Virology. 86, 8, p. 4463-4467 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 2

In vivo imaging of lymphatic vessels in development, wound healing, inflammation, and tumor metastasis

Martínez-Corral, I., Olmeda, D., Diéguez-Hurtado, R., Tammela, T., Alitalo, K. & Ortega, S., 2012, In: Proceedings of the National Academy of Sciences of the United States of America. 109, 16, p. 6223-6228 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Ligand oligomerization state controls Tie2 receptor trafficking and Angiopoietin-2 ligand-specific responses.

Pietilä, R., Nätyinki, M., Tammela, T., Kangas, J., Pulkki, K. H., Limaye, N., Vikkula, M., Koh, G. Y., Saharinen, P. I., Alitalo, K. & Eklund, L., 22 Feb 2012, In: Journal of Cell Science. 125, 9, p. 2212-2223 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Materials and methods involving hybrid vascular endothelial growth factor DNAs and proteins

Alitalo, K. K. & Jeltsch, M., 2 Oct 2012, US Patent and Trademark Office, Patent No. US 8,278,098 B2, 2 Oct 2012, Priority date 25 Feb 2000, Priority No. 60/185,205

Research output: Patent

File

PV-1 is recognized by the PAL-E antibody and forms complexes with NRP-1
Keuschnigg, J., Tvorogov, D., Elima, K., Salmi, M., Alitalo, K., Salminen, T. & Jalkanen, S., 5 Jul 2012, In: Blood. 120, 1, p. 232-235 4 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

Thermodynamic and structural description of allosterically regulated VEGFR-2 dimerization
Brozzo, M. S., Bjelic, S., Kisko, K., Schleier, T., Leppanen, V-M., Alitalo, K., Winkler, F. K. & Ballmer-Hofer, K., 2012, In: Blood. 119, 7, p. 1781-1788 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 9

VEGFR-2-specific forms of VEGF-D and VEGF-C and uses thereof

Alitalo, K. K., Jeltsch, M. M., Leppänen, V-M., Aho, K. K., Anisimov, A. & Tvorogov, D., 5 Jul 2012, WIPO, Patent No. WO2012/088563, 2 Jul 2012, Priority date 24 Nov 2010, Priority No. 61/458,517 (US)

Research output: Patent

File

2011

An important role of lymphatic vessel activation in limiting acute inflammation

Huggenberger, R., Siddiqui, S. S., Brander, D., Ullmann, S., Zimmermann, K., Antsiferova, M., Werner, S., Alitalo, K. & Detmar, M., 2011, In: Blood purification. 117, 17, p. 4667-4678 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 4

Äyräpään palkinto 2011 Juha Kerelle

Puolakkainen, P., Aaltonen, L. & Alitalo, K., 2011, In: Duodecim. 127, 1, p. 94-95 2 p.

Research output: Contribution to journal > Article > Professional

Biological Basis of Therapeutic Lymphangiogenesis

Norrmén, C., Tammela, T., Petrova, T. V. & Alitalo, K., 2011, In: Circulation . 123, 12, p. 1335-1351 17 p.

Research output: Contribution to journal > Review Article > peer-review

CKI alpha ablation highlights a critical role for p53 in invasiveness control

Elyada, E., Pribluda, A., Goldstein, R. E., Morgenstern, Y., Brachya, G., Cojocaru, G., Snir-Alkalay, I., Burstain, I., Haffner-Krausz, R., Jung, S., Wiener, Z., Alitalo, K., Oren, M., Pikarsky, E. & Ben-Neriah, Y., 17 Feb 2011, In: Nature. 470, 7334, p. 409-U208 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 7

CKIα ablation highlights a critical role for p53 in invasiveness control

Elyada, E., Pribluda, A., Goldstein, R. E., Morgenstern, Y., Brachya, G., Cojocaru, G., Snir-Alkalay, I., Burstain, I., Haffner-Krausz, R., Jung, S., Wiener, Z., Alitalo, K., Oren, M., Pikarsky, E. & Ben-Neriah, Y., 2011, In: Nature. 470, 7334, p. 409-413 5 p.

Research output: Contribution to journal > Review Article > peer-review

Copy number variation and selection during reprogramming to pluripotency

Hussein, S. M., Batada, N. N., Vuoristo, S., Ching, R. W., Autio, R., Narva, E., Ng, S., Sourour, M., Hämäläinen, R., Olsson, C., Lundin, K., Mikkola, M., Trokovic, R., Peitz, M., Bruestle, O., Bazett-Jones, D. P., Alitalo, K., Lahesmaa, R., Nagy, A. & Otonkoski, T., 2011, In: Nature. 471, 7336, p. 58-62 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 57

Cotargeting of VEGFR-1 and-3 and angiopoietin receptor Tie2 reduces the growth of solid human ovarian cancer in mice

Sallinen, H., Anttila, M., Grohn, O., Koponen, J., Hamalainen, K., Kholova, I., Kosma, V-M., Heinonen, S., Alitalo, K. & Yla-Herttuala, S., 2011, In: Cancer Gene Therapy. 18, 2, p. 100-109 10 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Expression and prognostic value of transcription factor PROX1 in colorectal cancer

Skog, M., Bono, P., Lundin, M., Lundin, J., Louhimo, J., Linder, N., Petrova, T. V., Andersson, L. C., Joensuu, H., Alitalo, K. & Haglund, C. H., 2011, In: British Journal of Cancer. 105, 9, p. 1346-1351 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Growth factor therapy and autologous lymph node transfer in lymphedema

Lähteenvuo, M., Honkonen, K., Tervala, T., Tammela, T., Suominen, E., Lähteenvuo, J., Kholova, I., Alitalo, K., Ylä-Herttuala, S. & Saaristo, A., 2011, In: Circulation Research. 123, 6, p. 613-620 8 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

KSHV-Initiated Notch Activation Leads to Membrane-Type-1MatrixMetalloproteinase-Dependent Lymphatic Endothelial-to-Mesenchymal Transition

Cheng, F., Pekkonen, P. M., Laurinavicius, S., Sugiyama, N., Henderson, S., Günther, T., Rantanen, V., Kaivanto, E., Aavikko, M., Sarek, G., Hautaniemi, S., Biberfeld, P., Aaltonen, L. A., Grundhoff, A., Boshoff, C., Alitalo, K., Lehti, K. & Ojala, P., 2011, In: Cell Host & Microbe. 10, 6, p. 577-590 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

KSHV-Initiated Notch Activation Leads to Membrane-Type-1 Matrix Metalloproteinase-Dependent Lymphatic Endothelial-to-Mesenchymal Transition

Cheng, F., Pekkonen, P., Laurinavicius, S., Sugiyama, N., Henderson, S., Guenther, T., Rantanen, V., Kaivanto, E., Aavikko, M., Sarek, G., Hautaniemi, S., Biberfeld, P., Aaltonen, L., Grundhoff, A., Boshoff, C., Alitalo, K., Lehti, K. & Ojala, P. M., 2011, In: Cell Host & Microbe. 10, 6, p. 577-590 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

Lipoxygenase mediates invasion of intrametastatic lymphatic vessels and propagates lymph node metastasis of human mammary carcinoma xenografts in mouse

Kerjaschki, D., Bago-Horvath, Z., Rudas, M., Sexl, V., Schneckleithner, C., Wolbank, S., Bartel, G., Krieger, S., Kalt, R., Hantusch, B., Keller, T., Nagy-Bojarszky, K., Huttary, N., Raab, I., Lackner, K., Krautgasser, K., Schachner, H., Kaserer, K., Rezar, S., Madlener, S., & 18 others, 2011, In: Journal of Clinical Investigation. 121, 5, p. 2000-2012 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 10

Macrophage skewing by Phd2 haplo deficiency prevents ischaemia by inducing arteriogenesis.

Takeda, Y., Costa, S., Delamarre, E., Roncal, C., Oliveira, R. L. D., Squadrito, M. L., Finisguerra, V., Deschoemaeker, S., Bruyere, F., Wenes, M., Hamm, A., Serneels, J., Magat, J., Bhattacharyya, T., Anisimov, A., Jordan, B., Alitalo, K., Maxwell, P., Gallez, B., Zhuang, Z., & 4 others, 9 Oct 2011, In: Nature. 479, 7371, p. 122-126 5 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 4

Modified VEGF-A with improved angiogenic properties

Alitalo, K. K., Tammela, T. L. H., Keskitalo, S. E., Pajusola, K. M., Jeltsch, M. M., Ylä-Herttuala, S., Kärpänen, T. H., Eriksson, U. & Uutela, M. J. T., 27 Sep 2011, US Patent and Trademark Office, Patent No. US 8,025,886 B2, 27 Sep 2011, Priority date 15 Aug 2005, Priority No. 60/708,226

Research output: Patent

File

Notch restricts lymphatic vessel sprouting induced by vascular endothelial growth factor

Zheng, W., Tammela, T., Yamamoto, M., Anisimov, A., Holopainen, T., Kaijalainen, S., Kärpänen, T. H., Lehti, K., Ylä-Herttuala, S. & Alitalo, K., 2011, In: *Blood*. 118, 4, p. 1154-1162 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Perspectives on Lymphangiogenesis and Angiogenesis in Cancer

Holopainen, T., Bry, M., Alitalo, K. & Saaristo, A., 2011, In: *Journal of Surgical Oncology*. 103, 6, p. 484-488 5 p.

Research output: Contribution to journal > Review Article > peer-review

Article has an altmetric score of 3

Photodynamic ablation of lymphatic vessels and intralymphatic cancer cells prevents metastasis

Tammela, T., Saaristo, A., Holopainen, T. T., Ylä-Herttuala, S., Andersson, L. C., Virolainen, M. S., Immonen, I. & Alitalo, K., 2011, In: *Science translational medicine*. 3, 69ra11, p. - 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

Response to Letter Regarding Article, "Biological Basis of Therapeutic Lymphangiogenesis"

Norrmén, C., Tammela, T., Alitalo, K. & Petrova, T. V., 13 Dec 2011, In: *Circulation*. 124, 24, p. E896-E896 1 p.

Research output: Contribution to journal > Article > Scientific

Roles of Prostaglandin E-2-EP3/EP4 Receptor Signaling in the Enhancement of Lymphangiogenesis During Fibroblast Growth Factor-2-Induced Granulation Formation

Hosono, K., Suzuki, T., Tamaki, H., Sakagami, H., Hayashi, I., Narumiya, S., Alitalo, K. & Majima, M., May 2011, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 31, 5, p. 1049-U246 21 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Soluble vascular endothelial growth factor receptor-3 suppresses lymphangiogenesis and lymphatic metastasis in bladder cancer

Yang, H., Kim, C., Kim, M.-J., Schwendener, R. A., Alitalo, K., Heston, W., Kim, I., Kim, W.-J. & Koh, G. Y., 2011, In: *Molecular Cancer*. 10, p. - 12 p., 36.

Research output: Contribution to journal > Article > Scientific > peer-review

Open AccessFile

Article has an altmetric score of 1

Structural analysis of vascular endothelial growth factor receptor-2/ligand complexes by small-angle X-ray solution scattering

Kisko, K., Brozzo, M. S., Missimer, J., Schleier, T., Menzel, A., Leppänen, V.-M., Alitalo, K., Walzthoeni, T., Aebersold, R. & Ballmer-Hofer, K., 2011, In: *FASEB Journal*. 25, 9, p. 2980-2986 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Structural determinants of vascular endothelial growth factor-D receptor binding and specificity

Leppänen, V.-M., Jeltsch, M., Anisimov, A., Tvorogov, D., Aho, K., Kalkkinen, N., Toivanen, P., Ylä-Herttuala, S., Ballmer-Hofer, K. & Alitalo, K., 2011, In: *Blood*. 117, 5, p. 1507-1515 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 6

The lymphatic vasculature in disease

Alitalo, K., 2011, In: *Nature Medicine*. 17, 11, p. 1371-1380 10 p.

Research output: Contribution to journal > Review Article > peer-review

Article has an altmetric score of 14

The Tyrosine Kinase BMX Is an Essential Mediator of Inflammatory Arthritis in a Kinase-Independent Manner

Gottar-Guillier, M., Dodeller, F., Huesken, D., Iourgenko, V., Mickanin, C., Labow, M., Gaveriaux, S., Kinzel, B., Mueller, M., Alitalo, K., Littlewood-Evans, A. & Cenni, B., 2011, In: *Journal of Immunology*. 186, 10, p. 6014-6023 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The yin, the yang, and the Angiopoietin-1

Saharinen, P. & Alitalo, K., 2011, In: *Journal of Clinical Investigation*. 121, 6, p. 2157-2159 3 p.

Research output: Contribution to journal > Article > Scientific

Vascular endothelial growth factor C acts as a neurotrophic factor for dopamine neurons in vitro and in vivo

Piltonen, M. H., Planken, A., Leskelä, O., Myöhänen, T. T., Hänninen, A-L., Auvinen, P., Alitalo, K., Anderssoo, J-O., Saarma, M. & Männistö, P., 14 Jul 2011, In: *Neuroscience*. 192, p. 550-563 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 7

Vascular endothelial growth factor receptor 3 directly regulates murine neurogenesis

Calvo, C-F., Fontaine, R. H., Soueid, J., Tammela, T., Mäkinen, T. M., Alfaro-Cervello, C., Bonnaud, F., Miguez, A., Benhaim, L., Xu, Y., Barallobre, M-J., Moutkine, I., Lyytikka, J., Tatlisumak, T., Pytowski, B., Zalc, B., Richardson, W., Kessaris, N., Manuel Garcia-Verdugo, J., Alitalo, K., & 2 others, 2011, In: *Genes & Development*. 25, 8, p. 831-844 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

VEGF and angiopoietin signaling in tumor angiogenesis and metastasis

Saharinen, P., Eklund, L., Pulkki, K., Bono, P. & Alitalo, K., 2011, In: *Trends in Molecular Medicine*. 17, 7, p. 347-362 16 p.

Research output: Contribution to journal > Review Article > peer-review

Article has an altmetric score of 3

VEGF Mediates Commissural Axon Chemoattraction through Its Receptor Flk1

de Almodovar, C. R., Fabre, P. J., Knevels, E., Coulon, C., Segura, I., Haddick, P. C. G., Aerts, L., Delattin, N., Strasser, G., Oh, W-J., Lange, C., Vinckier, S., Haigh, J., Fouquet, C., Gu, C., Alitalo, K., Castellani, V., Tessier-Lavigne, M., Chedotal, A., Charron, F., & 1 others, 2011, In: *Neuron*. 70, 5, p. 966-978 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 1

VEGFR-3 controls tip to stalk conversion at vessel fusion sites by reinforcing Notch signalling

Tammela, T., Zarkada, G., Nurmi, H., Jakobsson, L., Heinolainen, K., Tvorogov, D., Zheng, W., Franco, C. A., Murtomaki, A., Aranda, E., Miura, N., Yla-Herttuala, S., Fruttiger, M., Makinen, T., Eichmann, A., Pollard, J. W., Gerhardt, H. & Alitalo, K., 2011, In: *Nature Cell Biology*. 13, 10, p. 1202-1213 23 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 8

Zebrafish Tie-2 shares a redundant role with Tie-1 in heart development and regulates vessel integrity
Gjini, E., Hekking, L. H., Kuechler, A., Saharinen, P., Wienholds, E., Post, J.-A., Alitalo, K. & Schulte-Merker, S., 2011, In: Disease Models & Mechanisms. 4, 1, p. 57-66 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

2010

Akt/Protein Kinase B Is Required for Lymphatic Network Formation, Remodeling, and Valve Development

Zhou, F., Chang, Z., Zhang, L., Hong, Y.-K., Shen, B., Wang, B., Zhang, F., Lu, G., Tvorogov, D., Alitalo, K., Hemmings, B. A., Yang, Z. & He, Y., 2010, In: The American Journal of Pathology. 177, 4, p. 2124-2133 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Cardiomyocyte-targeted HIF-1 alpha gene therapy inhibits cardiomyocyte apoptosis and cardiac allograft vasculopathy in the rat

Keränen, M. A. I., Nykänen, A., Krebs, R., Pajusola, K., Tuuminen, R., Alitalo, K. & Lemström, K. B., 2010, In: Journal of Heart and Lung Transplantation. 29, 9, p. 1058-1066 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Claudin-like protein 24 interacts with the VEGFR-2 and VEGFR-3 pathways and regulates lymphatic vessel development

Saharinen, P. I., Heloterä, H., Miettinen, J., Norrmén, C., D'Amico Lago, G. V., Jeltsch, M., Langenberg, T., Vandevelde, W., Ny, A., Dewerchin, M., Carmeliet, P. & Alitalo, K., 2010, In: Genes & Development. 24, 9, p. 875-880 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

CXCR4 Signaling Regulates Metastasis of Chemoresistant Melanoma Cells by a Lymphatic Metastatic Niche

Kim, M., Koh, Y. J., Kim, K. E., Koh, B. I., Nam, D.-H., Alitalo, K., Kim, I. & Koh, G. Y., 2010, In: Cancer Research. 70, 24, p. 10411-10421 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Dermal Collagen and Lipid Deposition Correlate with Tissue Swelling and Hydraulic Conductivity in Murine Primary Lymphedema

Rutkowski, J. M., Markhus, C. E., Gyenge, C. C., Alitalo, K., Wiig, H. & Swartz, M. A., 2010, In: The American Journal of Pathology. 176, 3, p. 1122-1129 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Effective suppression of vascular network formation by combination of antibodies blocking VEGFR ligand binding and receptor dimerization

Tvorogov, D., Anisimov, A., Zheng, W., Leppänen, V.-M., Tammela, T., Laurinavicius, S., Holnthoner, W., Heloterä, H., Holopainen, T., Jeltsch, M., Kalkkinen, N., Lankinen, H., Ojala, P. M. & Alitalo, K., 2010, In: Cancer Cell. 18, 6, p. 630-640 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 10

Embryonic vascular endothelial cells are malleable to reprogramming via Prox1 to a lymphatic gene signature

Kim, H., Nguyen, V. P. K. H., Petrova, T. V., Cruz, M., Alitalo, K. & Dumont, D. J., 2010, In: BMC Developmental Biology. 10, p. Article Number: 72 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

FGF receptor-4 (FGFR4) polymorphism acts as an activity switch of a membrane type 1 matrix metalloproteinase-FGFR4 complex

Sugiyama, N., Varjosalo, M., Meller, P., Lohi, J., Chan, K. M., Zhou, Z., Alitalo, K., Taipale, J., Keski-Oja, J. & Lehti, K., 2010, In: Proceedings of the National Academy of Sciences of the United States of America. 107, 36, p. 15786-15791 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Fibroblast Growth Factor Receptor 4 Regulates Tumor Invasion by Coupling Fibroblast Growth Factor Signaling to Extracellular Matrix Degradation

Sugiyama, N., Varjosalo, M., Meller, P., Lohi, J., Hyytiäinen, M., Kilpinen, S., Kallioniemi, O., Ingvarsen, S., Engelholm, L. H., Taipale, J., Alitalo, K., Keski-Oja, J. & Lehti, K., 2010, In: Cancer Research. 70, p. 7851-7861 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Growth factor binding constructs, materials and methods

Alitalo, K. K. & Jeltsch, M. M., 21 Dec 2010, US Patent and Trademark Office, Patent No. US 7,855,178 B2, 21 Dec 2010, Priority date 5 Mar 2004, Priority No. 60/550,907

Research output: Patent

File

How do angiopoietins Tie in with vascular endothelial growth factors?

Saharinen, P., Bry, M. & Alitalo, K., 2010, In: Current Opinion in Hematology. 17, 3, p. 198-205 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Inside bloody lymphatics

D'Amico, G. & Alitalo, K., 29 Jul 2010, In: Blood. 116, 4, p. 512-513 2 p.

Research output: Contribution to journal › Article › Scientific

Open Access

Liprin beta 1 is highly expressed in lymphatic vasculature and is important for lymphatic vessel integrity

Norrmén, C., Vandevelde, W., Ny, A., Saharinen, P., Gentile, M., Haraldsen, G., Puolakkainen, P., Lukanidin, E., Dewerchin, M., Alitalo, K. & Petrova, T. V., 2010, In: Blood. 115, 4, p. 906-909 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Loss of Endothelial Tie1 Receptor Impairs Lymphatic Vessel Development-Brief Report

D'Amico, G. V., Korhonen, E. A., Waltari, M., Saharinen, P., Laakkonen, P. & Alitalo, K., 2010, In: Arteriosclerosis, Thrombosis, and Vascular Biology. 30, 2, p. 207-209 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Lymphangiogenesis: Molecular Mechanisms and Future Promise

Tammela, T. & Alitalo, K., 2010, In: Cell. 140, 4, p. 460-476 17 p.

Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 4

Neuropilin-2 mediates VEGF-C-induced lymphatic sprouting together with VEGFR3

Xu, Y., Yuan, L., Mak, J., Pardanaud, L., Caunt, M., Kasman, I., Larrivee, B., del Toro, R., Suchting, S., Medvinsky, A., Silva, J., Yang, J., Thomas, J-L., Koch, A. W., Alitalo, K., Eichmann, A. & Bagri, A., 2010, In: *Journal of Cell Biology*. 188, 1, p. 115-130 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Novel function for blood platelets and podoplanin in developmental separation of blood and lymphatic circulation

Uhrin, P., Zaujec, J., Breuss, J. M., Olcaydu, D., Chrenek, P., Stockinger, H., Fuertbauer, E., Moser, M., Haiko, P., Faessler, R., Alitalo, K., Binder, B. R. & Kerjaschki, D., 2010, In: *Blood*. 115, 19, p. 3997-4005 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open Access

Role of synectin in lymphatic development in zebrafish and frogs

Hermans, K., Claes, F., Vandevelde, W., Zheng, W., Geudens, I., Orsenigo, F., De Smet, F., Gjini, E., Anthonis, K., Ren, B., Kerjaschki, D., Autiero, M., Ny, A., Simons, M., Dewerchin, M., Schulte-Merker, S., Dejana, E., Alitalo, K. & Carmeliet, P., 2010, In: *Blood*. 116, 17, p. 3356-3366 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Stimulation of lymphangiogenesis via VEGFR-3 inhibits chronic skin inflammation

Huggenberger, R., Ullmann, S., Proulx, S. T., Pytowski, B., Alitalo, K. & Detmar, M., 2010, In: *Journal of Experimental Medicine*. 207, 10, p. 2255-2269 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Structural determinants of growth factor binding and specificity by VEGF receptor 2

Leppänen, V-M., Prota, A. E., Jeltsch, M., Anisimov, A., Kalkkinen, N., Strandin, T., Lankinen, H., Goldman, A., Ballmer-Hofer, K. & Alitalo, K., 2010, In: *Proceedings of the National Academy of Sciences of the United States of America*. 107, 6, p. 2425-2430 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 9

Suppressive Effects of Vascular Endothelial Growth Factor-B on Tumor Growth in a Mouse Model of Pancreatic Neuroendocrine Tumorigenesis

Albrecht, I., Kopfstein, L., Strittmatter, K., Schomber, T., Falkevall, A., Hagberg, C. E., Lorentz, P., Jeltsch, M., Alitalo, K., Eriksson, U., Christofori, G. & Pietras, K., 2010, In: *PLoS One*. 5, 11, p. Article Number: e14109 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Targeting Lymphatic Vessel Activation and CCL21 Production by Vascular Endothelial Growth Factor Receptor-3 Inhibition Has Novel Immunomodulatory and Antiarteriosclerotic Effects in Cardiac Allografts

Nykänen, A., Sandelin, H., Krebs, R., Keränen, M. A. I., Tuuminen, R., Kärpänen, T., Wu, Y., Pytowski, B., Koskinen, P. K., Yla-Herttuala, S., Alitalo, K. & Lemström, K. B., 2010, In: *Circulation*. 121, 12, p. 1413-1422 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Use of Cancer-Specific Genomic Rearrangements to Quantify Disease Burden in Plasma from Patients with Solid Tumors

McBride, D. J., Orpana, A., Sotiriou, C., Joensuu, H., Stephens, P. J., Mudie, L. J., Hämäläinen, E., Stebbings, L. A., Andersson, L. C., Flanagan, A. M., Durbecq, V., Ignatiadis, M., Kallioniemi, O.,

Heckman, C. A., Alitalo, K., Edgren, S. H. T., Futreal, P. A., Stratton, M. R. & Campbell, P. J., 2010, In: *Genes, Chromosomes & Cancer*. 49, 11, p. 1062-1069 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 12

Vascular Endothelial Growth Factor-B Acts as a Coronary Growth Factor in Transgenic Rats Without Inducing Angiogenesis, Vascular Leak, or Inflammation

Bry, M., Kivelä, R., Holopainen, T., Anisimov, A., Tammela, T., Soronen, J., Silvola, J., Saraste, A., Jeltsch, M., Korpisalo, P., Carmeliet, P., Lemström, K. B., Shibuya, M., Yla-Herttuala, S., Alhonen, L., Mervaala, E., Andersson, L. C., Knuuti, J. & Alitalo, K., 2010, In: *Circulation*. 122, 17, p. 1725-1733 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGF receptor 2/-3 heterodimers detected in situ by proximity ligation on angiogenic sprouts

Nilsson, I., Bahram, F., Li, X., Gualandi, L., Koch, S., Jarvius, M., Soderberg, O., Anisimov, A., Kholova, I., Pytowski, B., Baldwin, M., Yla-Herttuala, S., Alitalo, K. & Kreuger, J., 2010, In: *EMBO Journal*. 29, 8, p. 1377-1388 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 3

2009

Activated Forms of VEGF-C and VEGF-D Provide Improved Vascular Function in Skeletal Muscle

Anisimov, A., Alitalo, A., Korpisalo, P., Soronen, J., Kaijalainen, S., Leppanen, V-M., Jeltsch, M., Yla-Herttuala, S. & Alitalo, K., 2009, In: *Circulation Research*. 104, p. 1302-U156 25 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Angiopoietin-1 Overexpression Modulates Vascular Endothelium to Facilitate Tumor Cell

Dissemination and Metastasis Establishment

Holopainen, T., Huang, H., Chen, C., Kim, K. E., Zhang, L., Zhou, F., Han, W., Li, C., Yu, J., Wu, J., Koh, G. Y., Alitalo, K. & He, Y., 1 Jun 2009, In: *Cancer Research*. 69, 11, p. 4656-4664 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Antiangiogenic Gene Therapy With Soluble VEGFR-1,-2, and-3 Reduces the Growth of Solid Human Ovarian Carcinoma in Mice

Sallinen, H., Anttila, M., Narvainen, J., Koponen, J., Hamalainen, K., Kholova, I., Heikura, T., Toivanen, P., Kosma, V-M., Heinonen, S., Alitalo, K. & Yla-Herttuala, S., 2009, In: *Molecular therapy*. 17, p. 278-284 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Control of vascular morphogenesis and homeostasis through the angiopoietin-Tie system

Augustin, H. G., Koh, G. Y., Thurston, G. & Alitalo, K., 2009, In: *Nature Reviews. Molecular Cell Biology*. 10, p. 165-177 13 p.

Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 9

Critical role of CD11b(+) macrophages and VEGF in inflammatory lymphangiogenesis, antigen clearance, and inflammation resolution

Kataru, R. P., Jung, K., Jang, C., Yang, H., Schwendener, R. A., Baik, J. E., Han, S. H., Alitalo, K. & Koh, G. Y., 2009, In: *Blood*. 113, p. 5650-5659 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

FOXC2 controls formation and maturation of lymphatic collecting vessels through cooperation with NFATc1

Norrmén, C., Ivanov, K. I., Cheng, J., Zangger, N., Delorenzi, M., Jaquet, M., Miura, N., Puolakkainen, P., Horsley, V., Hu, J., Augustin, H. G., Ylä-Herttuala, S., Alitalo, K. & Petrova, T. V., 1 May 2009, In: *Journal of Molecular Cell Biology*. 185, 3, p. 439-457 19 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 13

FOXC2 controls formation and maturation of lymphatic collecting vessels through cooperation with NFATc1

Norrmén, C., Ivanov, K. I., Cheng, J., Zangger, N., Delorenzi, M., Jaquet, M., Miura, N., Puolakkainen, P., Horsley, V., Hu, J., Augustin, H., Ylä-Herttuala, S., Alitalo, K. & Petrova, T., 2009, In: *Journal of Cell Biology*. 185, 3, p. 439-457 19 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 13

Functional Analysis of FLT4 Mutations Associated with Nonne-Milroy Lymphedema

Verstraeten, V. L. R. M., Holthöner, W., van Steensel, M. A. M., Veraart, J. C. J. M., Bladergroen, R. S., Heckman, C. A., Keskkitalo, S., Frank, J., Alitalo, K., van Geel, M. & Steijlen, P. M., 2009, In: *Journal of Investigative Dermatology*. 129, p. 509-512 4 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Lymphangiogenesis in Health and Disease – An Overview

Stacker, S. A., Achen, M. G., Haiko, P. & Alitalo, K., 2009, *Lymphangiogenesis in Cancer Metastasis*. Stacker, S. A. & Achen, M. G. (eds.). Springer
Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific

Macrophages regulate salt-dependent volume and blood pressure by a vascular endothelial growth factor-C-dependent buffering mechanism

Machnik, A., Neuhofer, W., Jantsch, J., Dahlmann, A., Tammela, T., Machura, K., Park, J.-K., Beck, F.-X., Mueller, D. N., Derer, W., Goss, J., Ziemer, A., Dietsch, P., Wagner, H., van Rooijen, N., Kurtz, A., Hilgers, K. F., Alitalo, K., Eckardt, K.-U., Luft, F. C., & 2 others, 2009, In: *Nature Medicine*. 15, p. 545-552 8 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 30

Molecular Targeting of Lymphangiogenesis and Tumor Metastasis

Heckman, C. A., Holopainen, T. T. & Alitalo, K., 2009, *From Local Invasion to Metastatic Cancer*. Stanley, L. (ed.). Humana press, p. 283-295
Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific

Organ-Specific Lymphangiectasia, Arrested Lymphatic Sprouting, and Maturation Defects Resulting From Gene-Targeting of the PI3K Regulatory Isoforms p85 alpha, p55 alpha, and p50 alpha

Mouta-Rellum, C., Kirov, A., Miceli-Libby, L., Mancini, M. L., Petrova, T. V., Liaw, L., Prudovsky, I., Thorpe, P. E., Miura, N., Cantley, L. C., Alitalo, K., Fruman, D. A. & Vary, C. P. H., 2009, In: *Developmental Dynamics*. 238, p. 2670-2679 10 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

PDGF-A, -C, and -D but not PDGF-B increase TGF- β 1 and chronic rejection in rat cardiac allografts

Tuuminen, R., Nykänen, A. I., Krebs, R., Soronen, J., Pajusola, K., Keränen, M. A. I., Koskinen, P. K., Alitalo, K. & Lemström, K. B., 2009, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 29, 5, p. 691-698 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Recessive primary congenital lymphoedema caused by a VEGFR3 mutation

Ghalamkarpour, A., Holnthoner, W., Saharinen, P., Boon, L. M., Mulliken, J. B., Alitalo, K. & Vikkula, M., 2009, In: *Journal of Medical Genetics*. 46, p. 399-404 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular Endothelial Growth Factor-B Induces Myocardium-Specific Angiogenesis and Arteriogenesis via Vascular Endothelial Growth Factor Receptor-1-and Neuropilin Receptor-1-Dependent Mechanisms

Laehtenvuo, J. E., Laehtenvuo, M. T., Kivelä, A., Rosenlew, C., Falkevall, A., Klar, J., Heikura, T., Rissanen, T. T., Vaehäkangas, E., Korpisalo, P., Enholm, B., Carmeliet, P., Alitalo, K., Eriksson, U. & Ylä-Herttuala, S., 2009, In: *Circulation*. 119, 6, p. 845-854 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vegf/Flt4 signalling is suppressed by Dll4 in developing zebrafish intersegmental arteries

Hogan, B. M., Herpers, R., Witte, M., Helotera, H., Alitalo, K., Duckers, H. J. & Schulte-Merker, S., 2009, In: *Development*. 136, p. 4001-4009 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGFs and receptors involved in angiogenesis versus lymphangiogenesis

Lohela, M., Bry, M., Tammela, T. & Alitalo, K., 2009, In: *Current Opinion in Cell Biology*. 21, p. 154-165 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

2008

Aikuisen luuytimen kantasoluilla ei roolia verisuonten endoteelin uudismuodostuksessa ja kiinteiden kasvaimien kehittämisessä: [referaatti Proc Natl Acad Sci -lehden artikkelista]

Lauttia, S., Palm, J., Rossi, D., Kaskenpää, N., Rajantie, I., Ylä-Herttuala, S., Alitalo, K., Weissman, I. & Salven, P., 2008, In: *Duodecim*. 124, p. 1083 1 p.

Research output: Contribution to journal › Article › Scientific

Angiopoietins and the Tie receptors.

Saharinen, P. I., Eklund, L. & Alitalo, K., 2008, *Angiogenesis: An integrative approach from science to medicine*. Figg, W. & Folkman, J. (eds.). Springer

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific

Angiopoietins assemble distinct Tie2 signalling complexes in endothelial cell-cell and cell-matrix contacts

Saharinen, P., Eklund, L., Miettinen, J., Wirkkala, R., Anisimov, A., Winderlich, M., Nottebaum, A., Vestweber, D., Deutsch, U., Koh, G. Y., Olsen, B. R. & Alitalo, K., 2008, In: *Nature Cell Biology*. 10, 5, p. 527-537 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Blocking VEGFR-3 suppresses angiogenic sprouting and vascular network formation: [letters]

Tammela, T., Zarkada, G., Wallgard, E., Murtomäki, A., Suchting, S., Wirzenius, M., Waltari, M., Hellström, M., Schomber, T., Peltonen, R., Freitas, C., Duarte, A., Isoniemi, H., Laakkonen, P., Christofori, G., Ylä-Herttuala, S., Shibuya, M., Pytowski, B., Eichmann, A., Betsholtz, C., & 1 others, 2008, In: *Nature*. 31, 454(7204), p. 656-660 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 12

Bone marrow-derived circulating endothelial precursors do not contribute to vascular endothelium and are not needed for tumor growth

Lauttia, S., Palm, J., Rossi, D., Kaskenpää, N., Rajantie, I., Ylä-Herttuala, S., Alitalo, K., Weissman, I. L. & Salven, P., 2008, In: Proceedings of the National Academy of Sciences of the United States of America. 105, p. 6620-6625 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 7

Deletion of vascular endothelial growth factor C (VEGF-C) and VEGF-D is not equivalent to VEGF receptor 3 deletion in mouse embryos

Haiko, P., Mäkinen, T., Keskitalo, S., Taipale, J., Kärkkäinen, M., Baldwin, M., Stacker, S., Achen, M. & Alitalo, K., 2008, In: Molecular and Cellular Biology. 28 (8), 15, p. 4843-4850 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Essential roles for the Tec family kinases Tec and Btk in M-CSF receptor signaling pathways that regulate macrophage survival

Melcher, M., Unger, B., Schmidt, U., Rajantie, I. A., Alitalo, K. & Ellmeier, W., 2008, In: Journal of Immunology. 180, 12, p. 8048-8056 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Loss of Bmx nonreceptor tyrosine kinase prevents pressure overload-induced cardiac hypertrophy

Mitchell-Jordan, S. A., Holopainen, T., Ren, S., Wang, S., Warburton, S., Zhang, M. J., Alitalo, K., Wang, Y. & Vondriska, T. M., 2008, In: Circulation Research. 103, 12, p. 1359-1362 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Modeling lymphangiogenesis in a three-dimensional culture system

Bruyere, F., Melen-Lamalle, L., Blacher, S., Roland, G., Thiry, M., Moons, L., Frankenke, F., Carmeliet, P., Alitalo, K., Libert, C., Sleeman, J. P., Foidart, J.-M. & Noel, A., 2008, In: Nature methods. 5, 5, p. 431-437 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 1

Molecular biology and pathology of lymphangiogenesis

Kärpänen, T. & Alitalo, K., 2008, In: Annual review of pathology : mechanisms of disease.. 3, p. 367-397 31 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Overexpression of vascular endothelial growth factor-B in mouse heart alters cardiac lipid metabolism and induces myocardial hypertrophy

Kärpänen, T., Bry, M., Ollila, H., Seppänen-Laakso, T., Liimatta, E., Leskinen, H., Kivelä, R., Helkamaa, T., Merentie, M., Jeltsch, M., Paavonen, K., Andersson, L. C., Mervaala, E., Hassinen, I., Ylä-Herttuala, S., Oresic, M. & Alitalo, K., 2008, In: Circulation Research. 103, 9, p. 1018-1026 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Profound but dysfunctional lymphangiogenesis via vascular endothelial growth factor ligands from CD11b(+) macrophages in advanced ovarian cancer

Jeon, B.-H., Jang, C., Han, J., Kataru, R. P., Piao, L., Jung, K., Cha, H. J., Schwendener, R. A., Jang, K. Y., Kim, K.-S., Alitalo, K. & Koh, G. Y., 2008, In: Cancer Research. 68, p. 1100-1109 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Prox1 interacts with Atoh1 and Gfi1, and regulates cellular differentiation in the inner ear sensory epithelia

Kirjavainen, A., Sulg, M., Heyd, F., Alitalo, K., Ylä-Herttuala, S., Möry, T., Petrova, T., Pirvola, U. & Petrova, T. V., 2008, In: *Developmental Biology*. 322, 1, p. 33-45 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Reevaluation of the role of VEGF-B suggests a restricted role in the revascularization of the ischemic myocardium

Li, X., Tjwa, M., Van Hove, I., Enholm, B., Neven, E., Paavonen, K., Jeltsch, M., Juan, T. D., Sievers, R. E., Chorianopoulos, E., Wada, H., Vanwildemeersch, M., Noel, A., Foidart, J-M., Springer, M. L., von Degenfeld, G., Dewerchin, M., Blau, H. M., Alitalo, K., Eriksson, U., & 2 others, 2008, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 28, 9, p. 1614-1620 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Reply to Kerbel et al.: EPCs are again claimed to be essential in yet other models despite the irreproducibility of the original experiments introducing them: letter

Salven, P., Lauttia, S., Rossi, D., Ylä-Herttuala, S., Alitalo, K. & Weissman, I., 2008, In: *Proceedings of the National Academy of Sciences of the United States of America*. 105, 34, p. E55

Research output: Contribution to journal › Article › Scientific

Role of vascular endothelial growth factor-C in experimental obliterative airway disease

Krebs, R., Tikkanen, J. M., Nykanen, A. L., Alitalo, K., Ylä-Herttuala, S., Koskinen, P. K. & Lemström, K. B., 2008, In: *Journal of Heart and Lung Transplantation*. 27, p. S70-S70 1 p.

Research output: Contribution to journal › Conference article › Scientific › peer-review

Suppression of prostate cancer nodal and systemic metastasis by blockade of the lymphangiogenic axis

Burton, J. B., Priceman, S. J., Sung, J. L., Brakenhielm, E., An, D. S., Pytowski, B., Alitalo, K. & Wu, L., 2008, In: *Cancer Research*. 68 (, 19, p. 7828-7832 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

The tyrosine kinase inhibitor cediranib blocks ligand-induced vascular endothelial growth factor receptor-3 activity and lymphangiogenesis

Heckman, C. A., Holopainen, T., Wirzenius, M., Keskitalo, S., Jeltsch, M., Ylä-Herttuala, S., Wedge, S. R., Jurgensmeier, J. M. & Alitalo, K., 2008, In: *Cancer Research*. 68, 12, p. 4754-4762 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Transcription factor PROX1 induces colon cancer progression by promoting the transition from benign to highly dysplastic phenotype

Petrova, T., Nykänen, A., Norrmen, C., Ivanov, K. I., Andersson, L. C., Haglund, C., Puolakkainen, P., Wempe, F., von Melchner, H., Gradwohl, G., Vanharanta, S., Aaltonen, L. A., Saharinen, J. M. N., Gentile, M., Clarke, A., Taipale, J., Oliver, G. & Alitalo, K., 2008, In: *Cancer Cell*. 13, 5, p. 407-419 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Transgenic induction of vascular endothelial growth factor-C is strongly angiogenic in mouse embryos but leads to persistent lymphatic hyperplasia in adult tissues

Lohela, M., Heloterä, H., Haiko, P., Dumont, D. J. & Alitalo, K., 2008, In: *The American Journal of Pathology*. 173, 6, p. 1891-1901 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor-A and platelet-derived growth factor-B combination gene therapy prolongs angiogenic effects via recruitment of interstitial mononuclear cells and paracrine effects rather than improved pericyte coverage of angiogenic vessels

Korpisalo, P., Karvinen, H., Rissanen, T. T., Kilpijoki, J., Marjomäki, V., Baluk, P., McDonald, D. M., Cao, Y., Eriksson, U., Alitalo, K. & Ylä-Herttuala, S., 2008, In: *Circulation Research*. 103, 10, p. 1092-1099 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGF-C induced angiogenesis preferentially occurs at a distance from lymphangiogenesis

Benest, A. V., Harper, S. J., Herttuala, S. Y., Alitalo, K. & Bates, D. O., 2008, In: *Cardiovascular Research*. 78, p. 315-323 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

VEGF-D: a modifier of embryonic lymphangiogenesis

Kärpänen, T. & Alitalo, K., 2008, In: *Blood*. 112, 5, p. 1547-1548 2 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGFR-3 expression is restricted to blood and lymphatic vessels in solid tumors: [correspondence]

Petrova, T., Bono, P., Holnthoner, W., Chesnes, J., Pytowski, B., Sihto, H., Laakkonen, P., Heikkilä, P., Joensuu, H. & Alitalo, K., 2008, In: *Cancer Cell*. 13, 6, p. 554-556 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

VEGFR-3 fusion proteins

Alitalo, K. K. & Jeltsch, M. M., 9 Sep 2008, US Patent and Trademark Office, Patent No. US 7,422,741 B2, 9 Sep 2008, Priority date 5 Mar 2004, Priority No. 60/550,907

Research output: Patent

File

Vieraskynä/Pääkirjoitus: Kantasolukeksintö mahdollistaa henkilökohtaiset soluvaraosat

Alitalo, K. & Otonkoski, T. P. J., 20 Sep 2008, In: *Helsingin Sanomat*.

Research output: Contribution to journal › Article › General public

2007

Binding of ras to phosphoinositide 3-kinase p110alpha is required for ras-driven tumorigenesis in mice

Gupta, S., Ramjaun, A. R., Haiko, P., Wang, Y., Warne, P. H., Nicke, B., Nye, E., Stamp, G., Alitalo, K. & Downward, J., 2007, In: *Cell*. 129, 5, p. 957-968 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Distinct architecture of lymphatic vessels induced by chimeric vascular endothelial growth factor-C/vascular endothelial growth factor heparin-binding domain fusion proteins

Tammela, T., He, Y., Lyytikä, J., Jeltsch, M., Markkanen, J., Pajusola, K., Ylä-Herttuala, S. & Alitalo, K., 2007, In: *Circulation Research*. 100, 10, p. 1468-1475 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Distinct roles of vascular endothelial growth factor-D in lymphangiogenesis and metastasis

Kopfstein, L., Veikkola, T., Djonov, V. G., Baeriswyl, V., Schomber, T., Strittmatter, K., Stacker, S. A., Achen, M. G., Alitalo, K. & Christofori, G., 2007, In: *The American Journal of Pathology*. 170, 4, p. 1348-1361 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Distinct vascular endothelial growth factor signals for lymphatic vessel enlargement and sprouting

Wirzenius, M., Tammela, T., Uutela, M., He, Y., Odorisio, T., Zambruno, G., Nagy, J. A., Dvorak, H. F., Ylä-Herttuala, S., Shibuya, M. & Alitalo, K., 2007, In: *Journal of Experimental Medicine*. 204, 6, p. 1431-1440 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

Endostatin overexpression inhibits lymphangiogenesis and lymph node metastasis in mice

Brideau, G., Mäkinen, M. J., Elamaa, H., Tu, H., Nilsson, G., Alitalo, K., Pihlajaniemi, T. & Heljasvaara, R., 2007, In: *Cancer Research*. 67, 24, p. 11528-11535 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Enhanced capillary formation stimulated by a chimeric vascular endothelial growth factor/vascular endothelial growth factor-C silk domain fusion protein

Keskitalo, S., Tammela, T., Lyytikä, J., Kärpänen, T., Jeltsch, M., Markkanen, J., Ylä-Herttuala, S. & Alitalo, K., 2007, In: *Circulation Research*. 100, 10, p. 1460-1467 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Lymphangiogenesis in development and disease

Mäkinen, T. & Alitalo, K., 2007, *Vascular development*. Hoboken, NJ: John Wiley & Sons Ltd. , (Novartis Foundation symposium; vol. 283).

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

Modulating metastasis by a lymphangiogenic switch in prostate cancer

Brankenhielm, E., Burton, J. B., Johnson, M., Chavarria, N., Morizono, K., Chen, I., Alitalo, K. & Wu, L., 2007, In: *International Journal of Cancer*. 121, 10, p. 2153-2161 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 6

Molecular pathways for lymphangiogenesis and their role in human disease

Stacker, S. A., Farnsworth, R. H., Karnezis, T., Shayan, R., Smith, D. P., Paavonen, K., Davydova, N., Caesar, C., Inder, R., Baldwin, M. E., McColl, B. K., Roufail, S., Williams, R. A., Hughes, R. A., Alitalo, K. & Achen, M. G., 2007, *Decoding the genomic control of immune reactions*. Hoboken, NJ: John Wiley & Sons Ltd. , (Novartis Foundation symposium; vol. 281).

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

Molecular regulation of angiogenesis and lymphangiogenesis

Adams, R. H. & Alitalo, K., 2007, In: *Nature Reviews. Molecular Cell Biology*. 8, 6, p. 464-478 15 p.

Research output: Contribution to journal > Article > Scientific > peer-review

On the relationship of LDL and VEGFR1: not just a family affair

Ylä-Herttuala, S. & Alitalo, K., 2007, In: *EMBO Reports*. 8, 12, p. 1127-1128 2 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Proprotein convertases promote processing of VEGF-D, a critical step for binding the angiogenic receptor VEGFR-2

McColl, B. K., Paavonen, K., Karnezis, T., Harris, N. C., Rothacker, J., Davydova, N., Nice, E., Harder, K. W., Roufail, S., Hibbs, M., Rogers, P. A. W., Alitalo, K., Stacker, S. A. & Achen, M. G., 2007, In: *FASEB Journal*. 21, 4, p. 1088-1098 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 6

Therapeutic differentiation and maturation of lymphatic vessels after lymph node dissection and transplantation

Tammela, T., Saaristo, A., Holopainen, T., Lyytikä, J., Kotronen, A., Pitkonen, M., Abo-Ramadan, U., Ylä-Herttuala, S., Petrova, T. V. & Alitalo, K., 2007, In: *Nature Medicine*. 13, 12, p. 1458-1466 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

The VEGF family, the inside story

Heloterä, H. & Alitalo, K., 2007, In: *Cell*. 130, 4, p. 591-592 2 p.

Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 1

Transcriptomal comparison of human dermal lymphatic endothelial cells ex vivo and in vitro

Wick, N., Saharinen, P., Saharinen, J., Gurnhofer, E., Steiner, C. W., Raab, I., Stokic, D., Giovanoli, P., Buchsbaum, S., Burchard, A., Thurner, S., Alitalo, K. & Kerjaschki, D., 2007, In: *Physiological Genomics*. 28, 2, p. 179-192 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor receptor 3 is involved in tumor angiogenesis and growth

Laakkonen, P., Waltari, M., Holopainen, T., Takahashi, T., Pytowski, B., Steiner, P., Hicklin, D., Persaud, K., Tonra, J. R., Witte, L. & Alitalo, K., 2007, In: *Cancer Research*. 67, 2, p. 593-599 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGF-C-induced lymphangiogenesis in sentinel lymph nodes promotes tumor metastasis to distant sites

Hirakawa, S., Brown, L. F., Kodama, S., Paavonen, K., Alitalo, K. & Detmar, M., 2007, In: *Blood*. 109, 3, p. 1010-1017 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

VEGFR-1 and -2 regulate inflammation, myocardial angiogenesis, and arteriosclerosis in chronically rejecting cardiac allografts

Raisky, O., Nykänen, A. I., Krebs, R., Hollmen, M., Keränen, M. A. I., Tikkanen, J. M., Sihvola, R., Alhonen, L., Salven, P., Wu, Y., Hicklin, D. J., Alitalo, K., Koskinen, P. K. & Lemström, K. B., 2007, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 27, p. 819-825 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Viral oncogene-induced DNA damage response is activated in Kaposi sarcoma tumorigenesis

Koopal, S., Furuholm, J., Järvioluoma, A., Jäämaa, S., Pyakurel, P., Pussinen, C. E., Wirzenius, M., Biberfeld, P., Alitalo, K., Laiho, M. & Ojala, P., 2007, In: *PLoS Pathogens*. 3, 9, p. 1348-1360 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

2006

Chimeric VEGF-E(NZ7)/PlGF promotes angiogenesis via VEGFR-2 without significant enhancement of vascular permeability and inflammation

Zheng, Y., Murakami, M., Takahashi, H., Yamauchi, M., Kiba, A., Yamaguchi, S., Yabana, N., Alitalo, K. & Shibuya, M., 2006, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 26, 9, p. 2019-2026 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Common protective and diverse smooth muscle cell effects of AAV-mediated angiopoietin-1 and -2 expression in rat cardiac allograft vasculopathy

Nykänen, A. I., Pajusola, K., Krebs, R., Keränen, M. A. I., Raisky, O., Koskinen, P. K., Alitalo, K., Lemström, K., Lemström, K. B., Nykänen, A. & Keränen, M., 2006, In: *Circulation Research*. 98, p. 1373-1380 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Critical function of Bmx/Etk in ischemia-mediated arteriogenesis and angiogenesis

He, Y., Luo, Y., Tang, S., Rajantie, I., Salven, P., Heil, M., Zhang, R., Luo, D., Li, X., Chi, H., Yu, J., Carmeliet, P., Schaper, W., Sinusas, A. J., Sessa, W. C., Alitalo, K., Min, W. & Rajantie, I., 2006, In: *Journal of Clinical Investigation*. 116, 9, p. 2344-2355 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Early lymph vessel development from embryonic stem cells

Kreuger, J., Nilsson, I., Kerjaschki, D., Petrova, T., Alitalo, K. & Claesson-Welsh, L., 2006, In: *Arteriosclerosis, Thrombosis, and Vascular Biology*. 26, 5, p. 1073-1078 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Functional interaction of VEGF-C and VEGF-D with neuropilin receptors

Kärpänen, T., Heckman, C. A., Keskitalo, S., Jeltsch, M., Ollila, H., Neufeld, G., Tamagnone, L. & Alitalo, K., 2006, In: *FASEB Journal*. 20, 9, p. 1462-1472 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Large-scale identification of genes implicated in kidney glomerulus development and function

Takemoto, M., He, L., Norlin, J., Patrakka, J., Xiao, Z., Petrova, T., Bondjers, C., Asp, J., Wallgard, E., Sun, Y., Samuelsson, T., Mostad, P., Lundin, S., Miura, N., Sado, Y., Alitalo, K., Quaggin, S. E., Tryggvason, K. & Betsholtz, C., 2006, In: *EMBO Journal*. 25, 5, p. 1160-1174 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Lymphangiogenic growth factor responsiveness is modulated by postnatal lymphatic vessel maturation

Kärpänen, T., Wirzelius, M., Mäkinen, T., Veikkola, T., Haisma, H. J., Achen, M. G., Stacker, S. A., Pytowski, B., Ylä-Herttuala, S. & Alitalo, K., 2006, In: *The American Journal of Pathology*. 169, 2, p. 708-718 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Moderate antiangiogenic activity by local, transgenic expression of endostatin in Rip1Tag2 transgenic mice

Schaffhauser, B., Veikkola, T., Strittmatter, K., Antoniadis, H., Alitalo, K. & Christofori, G., 2006, In: *Journal of Leukocyte Biology*. 80, 4, p. 669-676 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Pulmonary vascular endothelial growth factor-C in development and lung injury in preterm infants

Janer, J., Lassus, P., Haglund, C., Paavonen, K., Alitalo, K. & Andersson, S., 2006, In: *American Journal of Respiratory and Critical Care Medicine*. 174, 3, p. 326-330 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Short and long-term effects of hVEGF-A(165) in cre-activated transgenic mice

Leppänen, P., Kholova, I., Mähönen, A., Airenne, K., Koota, S., Mansukoski, H., Närvänen, J., Wirtzenius, M., Alhonen, L., Jänne, J., Alitalo, K., Ylä-Herttuala, S. & Wirtzenius, M., 2006, In: *PLoS One*. 2006, 1, e13, 8 s

Research output: Contribution to journal › Article › Scientific › peer-review

Open AccessFile

Article has an altmetric score of 6

Sigma-RBI Handbook of Receptor Classification and Signal Transduction: VEGF Receptors

Jeltsch, M. & Alitalo, K., 2006, 5. ed. Natick, MA: Sigma-Aldrich Research Biotechnology, L.P. 3 p.

Research output: Book/Report > Anthology or special issue > Scientific > peer-review

Signaling and functions of angiopoietin-1 in vascular protection

Brindle, N. P. J., Saharinen, P. & Alitalo, K., 2006, In: *Circulation Research*. 98, p. 1014-1023 10 p.

Research output: Contribution to journal > Review Article > peer-review

Article has an altmetric score of 13

Targeting tie-1 inhibits the growth of tumor xenografts as a monotherapy and has increased activity in combination with a VEGF inhibitor

Dransfield, D., Laakkonen, P., Jussila, M., Arulanandam, A., Huang, L., Devy, L., Chen, J., Chang, Q., Pazmany, C., Rookey, K., Viswanathan, M., Mullberg, J., Schaus, J., Schoonbroodt, S., Steukers, M., Ladner, R., Wood, C. & Alitalo, K., 2006, In: *EJC supplements*. 4, p. 34-34 1 p.

Research output: Contribution to journal > Conference article > Scientific

Article has an altmetric score of 3

The effect of platelet-derived growth factor ligands in rat cardiac allograft vasculopathy and fibrosis

Tuuminen, R., Nykänen, A. I., Keränen, M., Krebs, R., Alitalo, K., Koskinen, P. K., Lemström, K. & Keränen, M., 2006, In: *Transplantation Proceedings*. 38, 10, p. 3271-3273 3 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Tie Receptor And Tie Ligand Materials And Methods For Modulating Female Fertility

Alitalo, K., Laakkonen, P. M., Kubo, H. & Sainio, K., 2006, Patent No. 2006002854

Research output: Patent

Transcapillary fluid balance consequences of missing initial lymphatics studied in a mouse model of primary lymphoedema

Karlsen, T. V., Kärkkäinen, M., Alitalo, K., Wiig, H. & Kärkkäinen, M. J., 2006, In: *Journal of Physiology*. 574, Pt 2, p. 583-596 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor (VEGF)/VEGF-C mosaic molecules reveal specificity determinants and feature novel receptor binding patterns

Jeltsch, M., Kärpänen, T., Strandin, T., Aho, K., Lankinen, H. & Alitalo, K., 2006, In: *Journal of Biological Chemistry*. 281, 17, p. 12187-12195 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

Vascular endothelial growth factor-C accelerates diabetic wound healing

Saaristo, A., Tammela, T., Färkkilä, A., Kärkkäinen, M., Suominen, E., Ylä-Herttuala, S. & Alitalo, K., 2006, In: *The American Journal of Pathology*. 169, 3, p. 1080-1087 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 6

Vascular endothelial growth factor C-induced collateral formation in a model of myocardial ischemia

Pättilä, T., Ikonen, T., Rutanen, J., Ahonen, A., Lommi, J., Lappalainen, K., Krogerus, L., Ihlberg, L., Partanen, T., Lähteenoja, L., Virtanen, K., Alitalo, K., Ylä-Herttuala, S. & Harjula, A., 2006, In: *Journal of Heart and Lung Transplantation*. 25, 2, p. 206-213 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

VEGF-C is a trophic factor for neural progenitors in the vertebrate embryonic brain

Le Bras, B., Barallobre, M-J., Homman-Ludiye, J., Ny, A., Wyns, S., Tammela, T., Haiko, P., Kärkkäinen, M., Yuan, L., Muriel, M-P., Chatzopoulou, E., Breant, C., Zalc, B., Carmeliet, P., Alitalo, K., Eichmann, A. & Thomas, J-L., 2006, In: *Nature Neuroscience*. 9, 3, p. 340-348 9 p.
Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Yet another function for hepatocyte growth factor

Tammela, T. & Alitalo, K., 2006, In: *Blood*. 107, p. 3424-3425 2 p.

Research output: Contribution to journal › Review Article › peer-review

2005

Activation of hypoxia-inducible factor-1 in bacillary angiomatosis: evidence for a role of hypoxia-inducible factor-1 in bacterial infections

Kempf, V., Lebedziejewski, M., Alitalo, K., Wälzlein, J-H., Ehehalt, U., Fiebig, J., Huber, S., Schutt, B., Sander, C. A., Muller, S., Grassl, G., Yazdi, A. S., Brehm, B. & Autenrieth, I. B., 2005, In: *Circulation*. 111, 8, p. 1054-1062 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Adenovirus-mediated gene transfer of placental growth factor to perivascular tissue induces

angiogenesis via upregulation of the expression of endogenous vascular endothelial growth factor-A

Roy, H., Bhardwaj, S., Babu, M., Jauhiainen, S., Herzig, K-H., Bellu, A. R., Haisma, H. J., Carmeliet, P., Alitalo, K. & Ylä-Herttuala, S., 2005, In: *Human Gene Therapy*. 16, 12, p. 1422-1428 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Angiopoietin-1 promotes lymphatic sprouting and hyperplasia

Tammela, T., Saaristo, A., Lohela, M., Morisada, T., Tornberg, J., Oike, Y., Pajusola, K., Thurston, G., Suda, T., Ylä-Herttuala, S. & Alitalo, K., 2005, In: *Blood*. 105, 12, p. 4642-4648 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Angiopoietin-1 promotes LYVE-1-positive lymphatic vessel formation

Morisada, T., Oike, Y., Yamada, Y., Urano, T., Akao, M., Kubota, Y., Maekawa, H., Kimura, Y., Ohmura, M., Miyamoto, T., Nozawa, S., Koh, G. Y., Alitalo, K. & Suda, T., 2005, In: *Blood*. 105, 12, p. 4649-4656 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Common anti-inflammatory and diverse smooth muscle cell effects of AAV-mediated angiopoietin-1 and-2 expression in rat cardiac allografts

Nykanen, A. I., Pajusola, K., Keranen, M., Alitalo, K., Koskinen, P. K. & Lemstrom, K. B., 2005, In: *Journal of Heart and Lung Transplantation*. 24, p. S104-S104 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Contribution of bone marrow-derived pericyte precursor cells to corneal vasculogenesis

Ozerdem, U., Alitalo, K., Salven, P. & Li, A., 2005, In: *Investigative Ophthalmology & Visual Science*. 46, 10, p. 3502-3506 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Endostatin signaling and regulation of endothelial cell-matrix interactions

Wickström, S. A., Alitalo, K. & Keski-Oja, J., 2005, In: *Advances in Cancer Research*. 94, p. 197-229 33 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Gene transfers of vascular endothelial growth factor-A, vascular endothelial growth factor-B, vascular endothelial growth factor-C, and vascular endothelial growth factor-D have no effects on atherosclerosis in hypercholesterolemic low-density lipoprotein-receptor/apolipoprotein B48-deficient mice

Leppänen, P., Koota, S., Kholova, I., Koponen, J., Fieber, C., Eriksson, U., Alitalo, K. & Ylä-Herttuala, S., 2005, In: *Circulation* . 112, 9, p. 1347-1352 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Inhibition of lymphogenous metastasis using adeno-associated virus-mediated gene transfer of a soluble VEGFR-3 decoy receptor

Lin, J., Lalani, A. S., Harding, T., Gonzalez, M., Wu, W-W., Luan, B., Tu, G. H., Koprivnikar, K., VanRoey, M., He, Y., Alitalo, K. & Jooss, K., 2005, In: *Cancer Research*. 65, 15, p. 6901-6909 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Lymphangiogenesis in development and human disease

Alitalo, K., Tammela, T. & Petrova, T., 2005, In: *Nature*. 438, 7070, p. 946-953 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 10

Molecular lymphangiogenesis: new players : [review]

Tammela, T., Petrova, T. & Alitalo, K., 2005, In: *Trends in Cell Biology*. 15, 8, p. 434-441 8 p.

Research output: Contribution to journal › Article › Scientific

Multiple angiopoietin recombinant proteins activate the Tie1 receptor tyrosine kinase and promote its interaction with Tie2

Saharinen, P., Kerkelä, K., Ekman, N., Marron, M., Brindle, N., Lee, G. M., Augustin, H., Koh, G. Y. & Alitalo, K., 2005, In: *Journal of Cell Biology*. 169, 2, p. 239-243 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Multivalent antibody materials and methods for VEGF/PDGF family of growth factors

Alitalo, K., Eriksson, U., Achen, M., Gregory Renner, C., Stacker, S., Li, H. & Laakkonen, P. M., 2005, Patent No. 2005087812

Research output: Patent

Neural guidance molecules regulate vascular remodeling and vessel navigation: [review]

Eichmann, A., Mäkinen, T. & Alitalo, K., 2005, In: *Genes & Development*. 19, 9, p. 1013-1021 9 p.

Research output: Contribution to journal › Article › Scientific

Pathogenesis of persistent lymphatic vessel hyperplasia in chronic airway inflammation

Baluk, P., Tammela, T., Ator, E., Lyubynska, N., Achen, M. G., Hicklin, D. J., Jeltsch, M., Petrova, T., Pytowski, B., Stacker, S. A., Ylä-Herttuala, S., Jackson, D. G., Alitalo, K. & McDonald, D. M., 2005, In: *Journal of Clinical Investigation*. 115, 2, p. 247-257 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

PDZ interaction site in ephrinB2 is required for the remodeling of lymphatic vasculature

Mäkinen, T., Adams, R. H., Bailey, J., Lu, Q., Ziemiecki, A., Alitalo, K., Klein, R. & Wilkinson, G. A., 2005, In: *Genes & Development*. 19, 3, p. 397-410 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Periadventitial angiopoietin-1 gene transfer induces angiogenesis in rabbit carotid arteries

Bhardwaj, S., Roy, H., Kärpänen, T., Hi, Y., Jauhiainen, S., Hedman, M., Alitalo, K. & Ylä-Herttuala, S., 2005, In: Gene Therapy (Basingstoke).

Research output: Contribution to journal › Article › Scientific › peer-review

Stabilized HIF-1alpha is superior to VEGF for angiogenesis in skeletal muscle via adeno-associated virus gene transfer

Pajusola, K., Kunnappu, J., Vuorikoski, S., Soronen, J., Andre, H., Pereira, T., Korpisalo, P., Ylä-Herttuala, S., Poellinger, L. & Alitalo, K., 2005, In: FASEB Journal. 19, 10, p. 1365-1367 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The biology of vascular endothelial growth factors: [review]

Tammela, T., Enholm, B., Alitalo, K. & Paavonen, K., 2005, In: Cardiovascular Research. 65, 13, p. 550-563 14 p.

Research output: Contribution to journal › Article › Scientific

The lymphatic vasculature: recent progress and paradigms : [review]

Oliver, G. & Alitalo, K., 2005, In: Annual Review of Cell and Developmental Biology. 21, p. 17.804

Research output: Contribution to journal › Article › Scientific

Use of VEGF-C to prevent restenosis

Alitalo, K. K., Ylä-Herttuala, S., Hiltunen, M., Jeltsch, M. M. & Achen, M. G., 25 Oct 2005, US Patent and Trademark Office, Patent No. US 6,958,147 B1, 25 Oct 2005, Priority date 26 Oct 1998, Priority No. 60/105,587

Research output: Patent

File

Vascular endothelial cell growth factor receptor 3-mediated activation of lymphatic endothelium is crucial for tumor cell entry and spread via lymphatic vessels

He, Y., Rajantie, I., Pajusola, K., Jeltsch, M., Holopainen, T. T., Ylä-Herttuala, S., Harding, T., Jooss, K., Takahashi, T. & Alitalo, K., 2005, In: Cancer Research. 65, 11, p. 4739-4746 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

2004

Adult bone marrow-derived cells recruited during angiogenesis comprise precursors for periendothelial vascular mural cells

Rajantie, I., Ilmonen, M., Alminäite, A., Ozerdem, U., Alitalo, K. & Salven, P., 2004, In: Blood. 104, p. 2084-2086 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

An endostatin-derived peptide interacts with integrins and regulates actin cytoskeleton and migration of endothelial cells

Wickstrom, S. A., Alitalo, K. & Keski-Oja, J., 2004, In: Journal of Biological Chemistry. 279, p. 20178-20185 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 4

Bmx tyrosine kinase transgene induces skin hyperplasia, inflammatory angiogenesis, and accelerated wound healing

Paavonen, K., Ekman, N., Wirzenius, M., Rajantie, I., Poutanen, M. & Alitalo, K., 2004, In: Molecular Biology of the Cell. 15, p. 4226-4233 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Comparative evaluation of FGF-2-, VEGF-A-, and VEGF-C-induced angiogenesis, lymphangiogenesis, vascular fenestrations, and permeability
Cao, R. H., Eriksson, A., Kubo, H., Alitalo, K., Cao, Y. H. & Thyberg, J., 2004, In: *Circulation Research*. 94, p. 664-670 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Defective valves and abnormal mural cell recruitment underlie lymphatic vascular failure in lymphedema distichiasis

Petrova, T. V., Karpanen, T., Norrmén, C., Mellor, R., Tamakoshi, T., Finegold, D., Ferrell, R., Kerjaschki, D., Mortimer, P., Ylä-Herttuala, S., Miura, N. & Alitalo, K., 2004, In: *Nature Medicine*. 10, p. 974-981 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 10

Gene transfer into rabbit arteries with adeno-associated virus and adenovirus vectors

Gruchala, M., Bhardwaj, S., Pajusola, K., Roy, H., Rissanen, T. T., Kokina, L., Kholova, I., Markkanen, J. E., Rutanen, J., Heikura, T., Alitalo, K., Bueler, H. & Ylä-Herttuala, S., 2004, In: *Journal of Gene Medicine*. 6, p. 545-554 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Immunodetection and quantification of vascular endothelial growth factor receptor-3 in human malignant tumor tissues

Bando, H., Brokelmann, M., Toi, M., Alitalo, K., Sleeman, J. P., Sipos, B., Grone, H. J. & Weich, H. A., 2004, In: *International Journal of Cancer*. 111, p. 184-191 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Kaposi sarcoma herpesvirus-induced cellular reprogramming contributes to the lymphatic endothelial gene expression in Kaposi sarcoma

Wang, H. W., Trotter, M. W. B., Lagos, D., Bourboulia, D., Henderson, S., Makinen, T., Elliman, S., Flanagan, A. M., Alitalo, K. & Boshoff, C., 2004, In: *Nature Genetics*. 36, p. 687-693 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Loss of neural cell adhesion molecule induces tumor metastasis by up-regulating lymphangiogenesis

Crnic, I., Strittmatter, K., Cavallaro, U., Kopfstein, L., Jussila, L., Alitalo, K. & Christofori, G., 2004, In: *Cancer Research*. 64, p. 8630-8638 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Lymphatic vasculature: development, molecular regulation and role in tumor metastasis and inflammation

Saharinen, P., Tammela, T., Kärkkäinen, M. & Alitalo, K., 2004, In: *Trends in Immunology*. 25, 7, p. 387-395 9 p.

Research output: Contribution to journal › Article › Scientific

Article has an altmetric score of 6

Oral imatinib mesylate (STI571/Gleevec) improves the efficacy of local intravascular vascular endothelial growth factor-C gene transfer in reducing neointimal growth in hypercholesterolemic rabbits

Leppanen, O., Rutanen, J., Hiltunen, M. O., Rissanen, T. T., Turunen, M. P., Sjöblom, T., Bruggen, J., Backstrom, G., Carlsson, M., Buchdunger, E., Bergqvist, D., Alitalo, K., Heldin, C. H., Ostman, A. & Ylä-Herttuala, S., 2004, In: *Circulation*. 109, p. 1140-1146 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Origins of serum semicarbazide-sensitive amine oxidase

Stolen, C. M., Yegutkin, G. G., Kurkijarvi, R., Bono, P., Alitalo, K. & Jalkanen, S., 2004, In: *Circulation Research*. 95, p. 50-57 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

PDGF-D induces macrophage recruitment, increased interstitial pressure, and blood vessel maturation during angiogenesis

Uutela, M., Wirzenius, M., Paavonen, K., Rajantie, I., He, Y. L., Karpanen, T., Lohela, M., Wiig, H., Salven, P., Pajusola, K., Eriksson, U. & Alitalo, K., 2004, In: *Blood*. 104, p. 3198-3204 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Preexisting lymphatic endothelium but not endothelial progenitor cells are essential for tumor lymphangiogenesis and lymphatic metastasis

He, Y. L., Rajantie, I., Ilmonen, M., Makinen, T., Karkkainen, M. J., Haiko, P., Salven, P. & Alitalo, K., 2004, In: *Cancer Research*. 64, p. 3737-3740 4 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Quantification of vascular endothelial growth factor-C (VEGF-C) by a novel ELISA

Weich, H. A., Bando, H., Brokelmann, M., Baumann, P., Toi, M., Barleon, B., Alitalo, K., Sipos, B. & Sleeman, J., 2004, In: *Journal of Immunological Methods*. 285, p. 145-155 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Specific induction of tie1 promoter by disturbed flow in atherosclerosis-prone vascular niches and flow-obstructing pathologies

Porat, R. M., Grunewald, M., Globerman, A., Itin, A., Barshtein, G., Alhonen, L., Alitalo, K. & Keshet, E., 2004, In: *Circulation Research*. 94, p. 394-401 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor-C gene therapy restores lymphatic flow across incision wounds

Saaristo, A., Tammela, T., Timonen, J., Yla-Herttuala, S., Tukiainen, E., Asko-Seljavaara, S. & Alitalo, K., 2004, In: *FASEB Journal*. 18, p. 1707-+ 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 9

Vascular endothelial growth factor C is required for sprouting of the first lymphatic vessels from embryonic veins

Kärkkäinen, M. J., Haiko, P., Sainio, K. M. H., Partanen, J. M., Taipale, J., Petrova, T. V., Jeltsch, M., Jackson, D. G., Talikka, M., Rauvala, H., Betsholtz, C. & Alitalo, K., 2004, In: *Nature immunology*. 5, 1, p. 74-80 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 9

Vascular endothelial growth factor receptor-3 in hypoxia-induced vascular development

Nilsson, I., Rolny, C., Wu, Y., Pytowski, B., Hicklin, D., Alitalo, K., Claesson-Welsh, L. & Wennstrom, S., 2004, In: *FASEB Journal*. 18, p. 1507-1515 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vegfc is required for vascular development and endoderm morphogenesis in zebrafish

Ober, E. A., Olofsson, B., Makinen, T., Jin, S. W., Shoji, W., Koh, G. Y., Alitalo, K. & Stainier, D. Y. R., 2004, In: *EMBO Reports*. 5, p. 78-84 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

2003

Angiogenic responses of vascular endothelial growth factors in periadventitial tissue

Bhardwaj, S., Roy, H., Gruchala, M., Viita, H., Kholova, I., Kokina, I., Achen, M. G., Stacker, S. A., Hedman, M., Alitalo, K. & Ylä-Herttuala, S., 2003, In: Human Gene Therapy. 14, p. 1451-1462 12 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Angiopoietin-1 protects against the development of cardiac allograft arteriosclerosis

Nykänen, A. I., Krebs, R., Saaristo, A., Turunen, P., Alitalo, K., Ylä-Herttuala, S., Koskinen, P. K. & Lemström, K. B., 2003, In: Circulation . 107, p. 1308-1314 7 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 6

Angiopoietin-2 induces human glioma invasion through the activation of matrix metalloprotease-2

Hu, B., Guo, P., Fang, Q., Tao, H. Q., Wang, D. G., Nagane, M., Huang, H. J. S., Gunji, Y., Nishikawa, R., Alitalo, K., Cavenee, W. K. & Cheng, S. Y., 2003, In: Proceedings of the National Academy of Sciences of the United States of America. 100, p. 8904-8909 6 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

Angiopoietin-regulated recruitment of vascular smooth muscle cells by endothelial-derived heparin binding EGF-like growth factor

Iivanainen, E., Nelimarkka, L., Elenius, V., Heikkinen, S. M., Junttila, T. T., Sihombing, L., Sundvall, M., Maatta, J. A., Jukka, V., Laine, O., Ylä-Herttuala, S., Higashiyama, S., Alitalo, K. & Elenius, K., 2003, In: FASEB Journal. 17, p. 1609-1621 13 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Blockade of vascular endothelial growth factor receptor-3 signaling inhibits fibroblast growth factor-2-induced lymphangiogenesis in mouse cornea (vol 99, pg 8868, 2002)

Kubo, H., Cao, R. H., Brakenhielm, E., Makinen, T., Cao, Y. H. & Alitalo, K., 2003, In: Proceedings of the National Academy of Sciences of the United States of America. 100, p. 10135-10135 1 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Double target for tumor mass destruction

Saharinen, P. I. & Alitalo, K., 2003, In: Journal of Clinical Investigation. 111, 9, p. 1277-1780 4 p.
Research output: Contribution to journal > Article > Scientific

Endostatin associates with lipid rafts and induces reorganization of the actin cytoskeleton via down-regulation of RhoA activity

Wickstrom, S. A., Alitalo, K. & Keski-Oja, J., 2003, In: Journal of Biological Chemistry. 278, p. 37895-37901 7 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 9

Etk/Bmx transactivates vascular endothelial growth factor 2 and recruits phosphatidylinositol 3-kinase to mediate the tumor necrosis factor-induced angiogenic pathway

Zhang, R., Xu, Y. Q., Ekman, N., Wu, Z. H., Wu, J., Alitalo, K. & Min, W., 2003, In: Journal of Biological Chemistry. 278, p. 51267-51276 10 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 9

Genesis and pathogenesis of lymphatic vessels

Jeltsch, M., Tammela, T., Alitalo, K. & Wilting, J., 2003, In: Cell and Tissue Research. 314, p. 69-84 16 p.
Research output: Contribution to journal > Review Article > peer-review

Article has an altmetric score of 3

Intrinsic versus microenvironmental regulation of lymphatic endothelial cell phenotype and function
Veikkola, T., Lohela, M., Ikenberg, K., Makinen, T., Korff, T., Saaristo, A., Petrova, T., Jeltsch, M., Augustin, H. G. & Alitalo, K., 2003, In: FASEB Journal. 17, p. 2006-2013 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Ligand-induced vascular endothelial growth factor receptor-3 (VEGFR-3) heterodimerization with VEGFR-2 in primary lymphatic endothelial cells regulates tyrosine phosphorylation sites
Dixelius, J., Makinen, T., Wirzenius, M., Karkkainen, M. J., Wernstedt, C., Alitalo, K. & Claesson-Welsh, L., 2003, In: Journal of Biological Chemistry. 278, p. 40973-40979 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Lymphangiogenic growth factors, receptors and therapies

Lohela, M., Saarikko, A. M., Veikkola, T. & Alitalo, K., Aug 2003, In: Thrombosis and Haemostasis. 90, 2, p. 167-184 18 p.

Research output: Contribution to journal > Review Article > peer-review

p130(Cas) couples the tyrosine kinase Bmx/Etk with regulation of the actin cytoskeleton and cell migration

Abassi, Y. A., Rehn, M., Ekman, N., Alitalo, K. & Vuori, K., 2003, In: Journal of Biological Chemistry. 278, p. 35636-35643 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

Plasmin activates the lymphangiogenic growth factors VEGF-C and VEGF-D

McColl, B. K., Baldwin, M. E., Roufail, S., Freeman, C., Moritz, R. L., Simpson, R. J., Alitalo, K., Stacker, S. A. & Achen, M. G., 2003, In: Journal of Experimental Medicine. 198, p. 863-868 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 6

Transcriptional regulation of the ornithine decarboxylase gene by c-Myc/Max/Mad network and retinoblastoma protein interacting with c-Myc

Auvinen, M., Jarvinen, K., Hotti, A., Okkeri, J., Laitinen, J., Janne, O. A., Coffino, P., Bergman, M., Andersson, L. C., Alitalo, K. & Holttä, E., 2003, In: International Journal of Biochemistry & Cell Biology. 35, p. 496-521 26 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor (VEGF) receptor-2 signaling mediates VEGF-C-Delta N Delta C- and VEGF-A-induced angiogenesis in vitro

Tille, J. C., Wang, X. Y., Lipson, K. E., McMahon, G., Ferrara, N., Zhu, Z. P., Hicklin, D. J., Sleeman, J. P., Eriksson, U., Alitalo, K. & Pepper, M. S., 2003, In: Experimental Cell Research. 285, p. 286-298 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor-D expression in human atherosclerotic lesions

Rutanen, J., Leppanen, P., Tuomisto, T. T., Rissanen, T. T., Hiltunen, M. O., Vajanto, I., Niemi, M., Hakkinen, T., Karkola, K., Stacker, S. A., Achen, M. G., Alitalo, K. & Ylä-Herttuala, S., 2003, In: Cardiovascular Research. 59, p. 971-979 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

VEGF-D is the strongest angiogenic and lymphangiogenic effector among VEGFs delivered into skeletal muscle via adenoviruses

Rissanen, T. T., Markkanen, J. E., Gruchala, M., Heikura, T., Puranen, A., Kettunen, M. I., Kholova, I., Kauppinen, R. A., Achen, M. G., Stacker, S. A., Alitalo, K. & Yla-Herttuala, S., 2003, In: Circulation Research. 92, p. 1098-1106 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGF guides angiogenic sprouting utilizing endothelial tip cell filopodia

Gerhardt, H., Golding, M., Fruttiger, M., Ruhrberg, C., Lundkvist, A., Abramsson, A., Jeltsch, M., Mitchell, C., Alitalo, K., Shima, D. & Betsholtz, C., 2003, In: Journal of Cell Biology. 161, p. 1163-1177 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

2002

Abnormal lymphatic vessel development in neuropilin 2 mutant mice

Yuan, L., Moyon, D., Pardanaud, L., Breant, C., Karkkainen, M. J., Alitalo, K. & Eichmann, A., 2002, In: Development. 129, 20, p. 4797-4806 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Adenoviral VEGF-C overexpression induces blood vessel enlargement, tortuosity, and leakiness but no sprouting angiogenesis in the skin or mucous membranes

Saaristo, A., Veikkola, T., Enholm, B., Hytonen, M., Arola, J., Pajusola, K., Turunen, P., Jeltsch, M., Karkkainen, M. J., Kerjaschki, D., Bueler, H., Yla-Herttuala, S. & Alitalo, K., 2002, In: FASEB Journal. 16, p. 1041-1049 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

A fluorescent Tie1 reporter allows monitoring of vascular development and endothelial cell isolation from transgenic mouse embryos

Iljin, K., Petrova, T. V., Veikkola, T., Kumar, V., Poutanen, M. & Alitalo, K., 2002, In: FASEB Journal. 16, p. 1764-1774 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Endostatin associates with integrin alpha(5)beta(1) and caveolin-1 and activates Src via a tyrosyl phosphatase-dependent pathway in human endothelial cells

Wickstrom, S. A., Alitalo, K. & Keski-Oja, J., 2002, In: Molecular Biology of the Cell. 13, p. 285A-285A 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Endothelial cells genetically selected from differentiating mouse embryonic stem cells incorporate at sites of neovascularization in vivo

Marchetti, S., Gimond, C., Iljin, K., Bourcier, C., Alitalo, K., Pouyssegur, J. & Pages, G., 2002, In: Journal of Cell Science. 115, p. 2075-2085 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

FGFR4 overexpression in pancreatic cancer is mediated by an intronic enhancer activated by HNF1 alpha

Shah, R. N. H., Ibbitt, J. C., Alitalo, K. & Hurst, H. C., 2002, In: Oncogene. 21, p. 8251-8261 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Glycosylated VEGF-B and method for increasing the amount of soluble VEGF-B: patent application

Jeltsch, M. M., Alitalo, K. K., Olofsson, B. & Eriksson, U., 6 Jun 2002, US Patent and Trademark Office, Patent No. US 2001/0068694 A1, 6 Jun 2002, Priority date 26 Jun 2000, Priority No. 60/220,824

Research output: Patent

File

Lymphangiogenic gene therapy with minimal blood vascular side effects

Saaristo, A., Veikkola, T., Tammela, T., Enholm, B., Karkkainen, M. J., Pajusola, K., Bueler, H., Yla-Herttuala, S. & Alitalo, K., 2002, In: *Journal of Experimental Medicine*. 196, p. 719-730 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 4

Lymphatic endothelial reprogramming of vascular endothelial cells by the Prox-1 homeobox transcription factor

Petrova, T. V., Makinen, T., Makela, T. P., Saarela, J., Virtanen, I., Ferrell, R. E., Finegold, D. N., Kerjaschki, D., Yla-Herttuala, S. & Alitalo, K., 2002, In: *EMBO Journal*. 21, p. 4593-4599 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Lymphatic vessels in vascularized human corneas: Immunohistochemical investigation using LYVE-1 and podoplanin

Cursiefen, C., Schlotzer-Schrehardt, U., Kuchle, M., Sorokin, L., Breiteneder-Geleff, S., Alitalo, K. & Jackson, D., 2002, In: *Investigative Ophthalmology & Visual Science*. 43, p. 2127-2135 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Suppression of tumor lymphangiogenesis and lymph node metastasis by blocking vascular endothelial growth factor receptor 3 signaling

He, Y. L., Kozaki, K. I., Karpanen, T., Koshikawa, K., Yla-Herttuala, S., Takahashi, T. & Alitalo, K., 2002, In: *Journal of the National Cancer Institute*. 94, p. 819-825 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Therapeutic lymphangiogenesis with human recombinant VEGF-C

Szuba, A., Skobe, M., Karkkainen, M. J., Shin, W. S., Beynet, D. P., Rockson, N. B., Dakhil, N., Spilman, S., Goris, M. L., Strauss, H. W., Quertermous, T., Alitalo, K. & Rockson, S. G., 2002, In: *FASEB Journal*. 16, p. 1985-+ 17 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 6

The transcription factor Prox1 is a marker for lymphatic endothelial cells in normal and diseased human tissues

Wilting, J., Papoutsi, M., Christ, B., Nicolaides, K. H., von Kaisenberg, C. S., Borges, J., Stark, G. B., Alitalo, K., Tomarev, S. I., Niemeyer, C. & Rossler, J., 2002, In: *FASEB Journal*. 16, p. 1271-+ 16 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 9

Tumor-associated macrophages express lymphatic endothelial growth factors and are related to peritumoral lymphangiogenesis

Schoppmann, S. F., Birner, P., Stockl, J., Kalt, R., Ullrich, R., Caucig, C., Kriehuber, E., Nagy, K., Alitalo, K. & Kerjaschki, D., 2002, In: *The American Journal of Pathology*. 161, p. 947-956 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor (VEGF)-C signaling through FLT-4 (VEGFR-3) mediates leukemic cell proliferation, survival, and resistance to chemotherapy

Dias, S., Choy, M., Alitalo, K. & Rafii, S., 2002, In: *Blood*. 99, p. 2179-2184 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor enhances cardiac allograft arteriosclerosis

Lemstrom, K. B., Krebs, R., Nykanen, A. I., Tikkanen, J. M., Sihvola, R. K., Aaltola, E. M., Hayry, P. J., Wood, J., Alitalo, K., Yla-Herttuala, S. & Koskinen, P. K., 2002, In: *Circulation*. 105, p. 2524-2530 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3

Vascular endothelial growth factor Ligands and receptors that regulate human cytotrophoblast survival are dysregulated in severe Preeclampsia and hemolysis, elevated liver enzymes, and low platelets syndrome

Zhou, Y., McMaster, M., Woo, K., Janatpour, M., Perry, J., Karpanen, T., Alitalo, K., Damsky, C. & Fisher, S. J., 2002, In: *The American Journal of Pathology*. 160, p. 1405-1423 19 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factors C and D and their VEGFR-2 and 3 receptors in blood and lymphatic vessels in healthy and arthritic synovium

Paavonen, K., Mandelin, J., Partanen, T., Jussila, L., Li, T. F., Ristimäki, A., Alitalo, K. & Kontinen, Y. T., 2002, In: *Journal of Rheumatology*. 29, p. 39-45 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGF-C induced lymphangiogenesis is associated with lymph node metastasis in orthotopic MCF-7 tumors

Mattila, M. M. T., Ruohola, J. K., Karpanen, T., Jackson, D. G., Alitalo, K. & Harkonen, P. L., 2002, In: *International Journal of Cancer*. 98, p. 946-951 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 3
2001

Adenoviral expression of vascular endothelial growth factor-C induces lymphangiogenesis in the skin
Enholm, B., Karpanen, T., Jeltsch, M., Kubo, H., Stenback, F., Prevo, R., Jackson, D. G., Ylä-Herttuala, S. & Alitalo, K., 2001, In: *Circulation Research*. 88, p. 623-629 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

A model for gene therapy of human hereditary lymphedema

Karkkainen, M. J., Saaristo, A., Jussila, L., Karila, K. A., Lawrence, E. C., Pajusola, K., Bueler, H., Eichmann, A., Kauppinen, R., Kettunen, M. I., Ylä-Herttuala, S., Finegold, D. N., Ferrell, R. E. & Alitalo, K., 2001, In: *Proceedings of the National Academy of Sciences of the United States of America*. 98, p. 12677-12682 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Biological action of angiopoietin-2 in a fibrin matrix model of angiogenesis is associated with activation of Tie2

Teichert-Kuliszewska, K., Maisonpierre, P. C., Jones, N., Campbell, A. I. M., Master, Z., Bendeck, M. P., Alitalo, K., Dumont, D. J., Yancopoulos, G. D. & Stewart, D. J., 2001, In: *Cardiovascular Research*. 49, p. 659-670 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Bmx tyrosine kinase has a redundant function downstream of angiopoietin and vascular endothelial growth factor receptors in arterial endothelium

Rajantie, I., Ekman, N., Iljin, K., Arighi, E., Gunji, Y., Kaukonen, J., Palotie, A., Dewerchin, M., Carmeliet, P. & Alitalo, K., 2001, In: *Molecular and Cellular Biology*. 21, p. 4647-4655 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Chromosomal location, exon structure, and vascular expression patterns of the human PDGFC and PDGFD genes

Uutela, M., Lauren, J., Bergsten, E., Li, X. R., Horelli-Kuitunen, N., Eriksson, U. & Alitalo, K., 2001, In: *Circulation*. 103, p. 2242-2247 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Induction of tumor lymphangiogenesis by VEGF-C promotes breast cancer metastasis

Skobe, M., Hawighorst, T., Jackson, D. G., Prevo, R., Janes, L., Velasco, P., Riccardi, L., Alitalo, K., Claffey, K. & Detmar, M., 2001, In: *Nature Medicine*. 7, p. 192-198 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Inhibition of lymphangiogenesis with resulting lymphedema in transgenic mice expressing soluble VEGF receptor-3

Makinen, T., Jussila, L., Veikkola, T., Karpanen, T., Kettunen, M. I., Pulkkanen, K. J., Kauppinen, R., Jackson, D. G., Kubo, H., Nishikawa, S. I., Yla-Herttuala, S. & Alitalo, K., 2001, In: *Nature Medicine*. 7, p. 199-205 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Interaction of endostatin with integrins implicated in angiogenesis

Rehn, M., Veikkola, T., Kukk-Valdre, E., Nakamura, H., Ilmonen, M., Lombardo, C. R., Pihlajaniemi, T., Alitalo, K. & Vuori, K., 2001, In: *Proceedings of the National Academy of Sciences of the United States of America*. 98, p. 1024-1029 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Isolated lymphatic endothelial cells transduce growth, survival and migratory signals via the VEGF-C/D receptor VEGFR-3

Makinen, T., Veikkola, T., Mustjoki, S., Karpanen, T., Catimel, B., Nice, E. C., Wise, L., Mercer, A., Kowalski, H., Kerjaschki, D., Stacker, S. A., Achen, M. G. & Alitalo, K., 2001, In: *EMBO Journal*. 20, p. 4762-4773 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

PDGF-D is a specific, protease-activated ligand for the PDGF beta-receptor

Bergsten, E., Uutela, M., Li, X. R., Pietras, K., Ostman, A., Heldin, C. H., Alitalo, K. & Eriksson, U., 2001, In: *Nature Cell Biology*. 3, p. 512-516 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Signalling via vascular endothelial growth factor receptor-3 is sufficient for lymphangiogenesis in transgenic mice

Veikkola, T. M., Jussila, L., Mäkinen, T. M., Kärpänen, T. H., Jeltsch, M., Petrova, T., Hajime, K., Hajime, K., Gavin, T., McDonald, D. M., Marc G, A., Stacker, S. A. & Alitalo, K., 15 Mar 2001, In: *EMBO Journal*. 20, 6, p. 1223-1231 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 12

Signalling via VEGFR-3 is sufficient for lymphangiogenesis in transgenic mice.

Jussila, L., Veikkola, T., Jeltsch, M., Thurston, G., McDonald, D., Achen, M., Stacker, S. & Alitalo, K., 2001, In: *Clinical Cancer Research*. 7, p. 3762S-3762S 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The Drosophila VEGF receptor homolog is expressed in hemocytes

Heino, T. I., Karpanen, T., Wahlstrom, G., Pulkkinen, M., Eriksson, U., Alitalo, K. & Roos, C., 2001, In: *Mechanisms of Development*. 109, p. 69-77 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The specificity of receptor binding by vascular endothelial growth factor-D is different in mouse and man

Baldwin, M. E., Catimel, B., Nice, E. C., Roufail, S., Hall, N. E., Stenvers, K. L., Karkkainen, M. J., Alitalo, K., Stacker, S. A. & Achen, M. G., 2001, In: *Journal of Biological Chemistry*. 276, p. 19166-19171 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular abnormalities and deregulation of VEGF in Lkb1-deficient mice

Ylikorkala, A., Rossi, D. J., Korsisaari, N., Luukko, K., Alitalo, K., Henkemeyer, M. & Makela, T. P., 2001, In: *Science*. 293, p. 1323-1326 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor-B-deficient mice display an atrial conduction defect

Aase, K., von Euler, G., Li, X., Ponten, A., Thoren, P., Cao, R., Cao, Y., Olofsson, B., Gebre-Medhin, S., Pekny, M., Alitalo, K., Betsholtz, C. & Eriksson, U., 2001, In: *Circulation*. 104, p. 358-364 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor-C-mediated lymphangiogenesis promotes tumour metastasis

Mandriota, S. J., Jussila, L., Jeltsch, M., Compagni, A., Baetens, D., Prevo, R., Banerji, S., Huarte, J., Montesano, R., Jackson, D. G., Orci, L., Alitalo, K., Christofori, G. & Pepper, M. S., 2001, In: *EMBO Journal*. 20, p. 672-682 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor C promotes tumor lymphangiogenesis and intralymphatic tumor growth

Karpanen, T., Egeblad, M., Karkkainen, M. J., Kubo, H., Yla-Herttuala, S., Jaattela, M. & Alitalo, K., 2001, In: *Cancer Research*. 61, p. 1786-1790 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGFR3 gene structure, regulatory region, and sequence polymorphisms

Iljin, K., Karkkainen, M. J., Lawrence, E. C., Kimak, M. A., Uutela, M., Taipale, J., Pajusola, K., Alhonen, L., Halmekyto, M., Finegold, D. N., Ferrell, R. E. & Alitalo, K., 2001, In: *FASEB Journal*. 15, p. 1028-1036 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

2000

Absence of functional lymphatics within a murine sarcoma: A molecular and functional evaluation

Leu, A. J., Berk, D. A., Lymboussaki, A., Alitalo, K. & Jain, R. K., 2000, In: *Cancer Research*. 60, p. 4324-4327 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Congenital hereditary lymphedema caused by a mutation that inactivates VEGFR3 tyrosine kinase

Irrthum, A., Karkkainen, M. J., Devriendt, K., Alitalo, K. & Vikkula, M., 2000, In: *American Journal of Human Genetics*. 67, p. 295-301 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Developmental expression of Pim kinases suggests functions also outside of the hematopoietic system

Eichmann, A., Yuan, L., Breant, C., Alitalo, K. & Koskinen, P. J., 2000, In: *Oncogene*. 19, p. 1215-1224 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Intravascular adenovirus-mediated VEGF-C gene transfer reduces neointima formation in balloon-denuded rabbit aorta

Hiltunen, M. O., Laitinen, M., Turunen, M. P., Jeltsch, M., Hartikainen, J., Rissanen, T. T., Laukkanen, J., Niemi, M., Kossila, M., Hakkinen, T. P., Kivela, A., Enholm, B., Mansukoski, H., Turunen, A. M., Alitalo, K. & Yla-Herttuala, S., 2000, In: *Circulation*. 102, p. 2262-2268 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Involvement of vascular endothelial growth factor receptor-3 in maintenance of integrity of endothelial cell lining during tumor angiogenesis

Kubo, H., Fujiwara, T., Jussila, L., Hashi, H., Ogawa, M., Shimizu, K., Awane, M., Sakai, Y., Takabayashi, A., Alitalo, K., Yamaoka, Y. & Nishikawa, S. I., 2000, In: *Blood*. 96, p. 546-553 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Missense mutations interfere with VEGFR-3 signalling in primary lymphoedema

Karkkainen, M. J., Ferrell, R. E., Lawrence, E. C., Kimak, M. A., Levinson, K. L., McTigue, M. A., Alitalo, K. & Finegold, D. N., 2000, In: *Nature Genetics*. 25, p. 153-159 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Monoclonal antibodies to vascular endothelial growth factor-D block its interactions with both VEGF receptor-2 and VEGF receptor-3

Achen, M. G., Roufail, S., Domagala, T., Catimel, B., Nice, E. C., Geleick, D. M., Murphy, R., Scott, A. M., Caesar, C., Makinen, T., Alitalo, K. & Stacker, S. A., 2000, In: *European Journal of Biochemistry*. 267, p. 2505-2515 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

PDGF-C is a new protease-activated ligand for the PDGF alpha-receptor

Li, X. R., Ponten, A., Aase, K., Karlsson, L., Abramsson, A., Uutela, M., Backstrom, G., Hellstrom, M., Bostrom, H., Li, H., Soriano, P., Betscholtz, C., Heldin, C. H., Alitalo, K., Ostman, A. & Eriksson, U., 2000, In: *Nature Cell Biology*. 2, p. 302-309 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The Bmx tyrosine kinase is activated by IL-3 and G-CSF in a PI-3K dependent manner

Ekman, N., Arighi, E., Rajantie, I., Saharinen, P., Ristimäki, A., Silvennoinen, O. & Alitalo, K., 2000, In: *Oncogene*. 19, p. 4151-4158 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor-C and its receptor VEGFR-3 in the nasal mucosa and in nasopharyngeal tumors

Saaristo, A., Partanen, T., Arola, T. J., Jussila, L., Hytönen, M. L., Mäkitie, A. A., Vento, S., Kaipainen, A., Malmberg, C. H. O. & Alitalo, K. K., 2000, In: *The American Journal of Pathology*. 157, p. 7-14 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Vascular endothelial growth factor receptor-3 in lymphangiogenesis in wound healing

Paavonen, K., Puolakkainen, P., Jussila, L., Jahkola, T. & Alitalo, K., 2000, In: *The American Journal of Pathology*. 156, p. 1499-1504 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

VEGF-C adenovirus gene transfer reduces intima formation in rabbits

Jeltsch, M., Hiltunen, M. O., Laitinen, M., Turunen, M. P., Hartikainen, J., Rissanen, T. T., Laukkanen, J., Niemi, M., Kossila, M., Häkkinen, T. P., Kivelä, A., Enholm, B. C., Mansukoski, H., Turunen, A-M., Alitalo, K. & Ylä-Herttala, S., Jul 2000, 1 ed. 1 p. (*Atherosclerosis*; vol. 151, no. 1)

Research output: Book/Report > Anthology or special issue > Scientific > peer-review

VEGF-C and VEGF-D expression in neuroendocrine cells and their receptor, VEGFR-3, in fenestrated blood vessels in human tissues

Partanen, T. A., Arola, J., Saaristo, A., Jussila, L., Ora, A., Miettinen, M., Stacker, S. A., Achen, M. G. & Alitalo, K., 2000, In: *FASEB Journal*. 14, p. 2087-2096 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

VEGF-C signaling pathways through VEGFR-2 and VEGFR-3 in vasculoangiogenesis and hematopoiesis

Hamada, K., Oike, Y., Takakura, N., Ito, Y., Jussila, L., Dumont, D. J., Alitalo, K. & Suda, T., 2000, In: *Blood*. 96, p. 3793-3800 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1999

Angiosarcomas express mixed endothelial phenotypes of blood and lymphatic capillaries -

Podoplanin as a specific marker for lymphatic endothelium

Breiteneder-Geleff, S., Soleiman, A., Kowalski, H., Horvat, R., Amann, G., Kriehuber, E., Diem, K., Weninger, W., Tschachler, E., Alitalo, K. & Kerjaschki, D., 1999, In: *The American Journal of Pathology*. 154, p. 385-394 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Biosynthesis of vascular endothelial growth factor-D involves proteolytic processing which generates non-covalent homodimers

Stacker, S. A., Stenvers, K., Caesar, C., Vitali, A., Domagala, T., Nice, E., Roufail, S., Simpson, R. J., Moritz, R., Karpanen, T., Alitalo, K. & Achen, M. G., 1999, In: *Journal of Biological Chemistry*. 274, p. 32127-32136 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

c-Myc and E1A induced cellular sensitivity to activated NK cells involves cytotoxic granules as death effectors

Klefström, J., Kovanen, P. E., Somersalo, K., Hueber, A. O., Littlewood, T., Evan, G. I., Greenberg, A. H., Saksela, E., Timonen, T. & Alitalo, K., 1999, In: *Oncogene*. 18, p. 2181-2188 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Current biology of VEGF-B and VEGF-C

Olofsson, B., Jeltsch, M., Eriksson, U. & Alitalo, K., 1999, In: *Current Opinion in Biotechnology*. 1999/10, 6, p. 528-535 8 p.

Research output: Contribution to journal › Review Article › peer-review

Differential binding of vascular endothelial growth factor B splice and proteolytic isoforms to neuropilin-1

Makinen, T., Olofsson, B., Karpanen, T., Hellman, U., Soker, S., Klagsbrun, M., Eriksson, U. & Alitalo, K., 1999, In: *Journal of Biological Chemistry*. 274, p. 21217-21222 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Distribution of human herpesvirus-8 latently infected cells in Kaposi's sarcoma, multicentric Castleman's disease, and primary effusion lymphoma

Dupin, N., Fisher, C., Kellam, P., Ariad, S., Tulliez, M., Franck, N., van Marck, E., Salmon, D., Gorin, I., Escande, J. P., Weiss, R. A., Alitalo, K. & Boshoff, C., 1999, In: *Proceedings of the National Academy of Sciences of the United States of America*. 96, p. 4546-4551 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Endothelial growth factor receptors in human fetal heart

Partanen, T. A., Makinen, T., Arola, J., Suda, T., Weich, H. A. & Alitalo, K., 1999, In: *Circulation*. 100, p. 583-586 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Endothelial receptor tyrosine kinases activate the STAT signaling pathway: mutant Tie-2 causing venous malformations signals a distinct STAT activation response

Korpelainen, E. I., Karkkainen, M., Gunji, Y., Vikkula, M. & Alitalo, K., 1999, In: *Oncogene*. 18, p. 18 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Expression of vascular endothelial growth factor receptor-3 and podoplanin suggests a lymphatic endothelial cell origin of Kaposi's sarcoma tumor cells

Weninger, W., Partanen, T. A., Breiteneder-Geleff, S., Mayer, C., Kowalski, H., Mildner, M., Pammer, J., Sturzl, M., Kerjaschki, D., Alitalo, K. & Tschachler, E., 1999, In: Laboratory Investigation. 79, p. 243-251 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Lack of lymphatic vascular specificity of vascular endothelial growth factor receptor 3 in 185 vascular tumors

Partanen, T. A., Alitalo, K. & Miettinen, M., 1999, In: Cancer. 86, p. 2406-2412 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Localization of VEGF-B in the mouse embryo suggests a paracrine role of the growth factor in the developing vasculature

Aase, K., Lymboussaki, A., Kaipainen, A., Olofsson, B., Alitalo, K. & Eriksson, U., 1999, In: Developmental Dynamics. 215, p. 12-25 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Lymphatic endothelial tumors induced by intraperitoneal injection of incomplete Freund's adjuvant Mancardi, S., Stanta, G., Dusetti, N., Bestagno, M., Jussila, L., Zweyer, M., Lunazzi, G., Dumont, D., Alitalo, K. & Burrone, O. R., 1999, In: Experimental Cell Research. 246, p. 368-375 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Papillary intralymphatic angioendothelioma (PILA) - A report of twelve cases of a distinctive vascular tumor with phenotypic features of lymphatic vessels

Fanburg-Smith, J. C., Michal, M., Partanen, T. A., Alitalo, K. & Miettinen, M., 1999, In: American Journal of Surgical Pathology. 23, p. 1004-1010 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Polarized vascular endothelial growth factor secretion by human retinal pigment epithelium and localization of vascular endothelial growth factor receptors on the inner choriocapillaris - Evidence for a trophic paracrine relation

Blaauwgeers, H. G. T., Hotkamp, B. W., Rutten, H., Witmer, A. N., Koolwijk, P., Partanen, T. A., Alitalo, K., Kroon, M. E., Kijlstra, A., van Hinsbergh, V. W. M. & Schlingemann, R. O., 1999, In: The American Journal of Pathology. 155, p. 421-428 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Prognostic value of tumour vascularity in metastatic melanoma and association of blood vessel density with vascular endothelial growth factor expression

Vlaykova, T., Laurila, P., Muhonen, T., Hahka-Kemppinen, M., Jekunen, A., Alitalo, K. & Pyrhonen, S., 1999, In: Melanoma Research. 9, p. 59-68 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Role of Ets factors in the activity and endothelial cell specificity of the mouse Tie gene promoter Iljin, K., Dube, A., Kontusaari, S., Korhonen, J., Lahtinen, I., Oettgen, P. & Alitalo, K., 1999, In: FASEB Journal. 13, p. 377-386 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor (VEGF) and VEGF-C show overlapping binding sites in embryonic endothelia and distinct sites in differentiated adult endothelia

Lymboussaki, A., Olofsson, B., Eriksson, U. & Alitalo, K., 1999, In: Circulation Research. 85, p. 992-999 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor (VEGF)-like protein from orf virus NZ2 binds to VEGFR2 and neuropilin-1

Wise, L. M., Veikkola, T., Mercer, A. A., Savory, L. J., Fleming, S. B., Caesar, C., Vitali, A., Makinen, T., Alitalo, K. & Stacker, S. A., 1999, In: *Proceedings of the National Academy of Sciences of the United States of America*. 96, p. 3071-3076 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor-C (VEGF-C) and its receptors KDR and flt-4 are expressed in AIDS-associated Kaposi's sarcoma

Skobe, M., Brown, L. F., Tognazzi, K., Ganju, R. K., Dezube, B. J., Alitalo, K. & Detmar, M., 1999, In: *Journal of Investigative Dermatology*. 113, p. 1047-1053 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor-C (VEGF-C) and its receptors VEGFR-2 and VEGFR-3 are expressed in AIDS-associated Kaposi's sarcoma

Skobe, M., Brown, L., Tognazzi, K., Groupman, J., Alitalo, K. & Detmar, M., 1999, In: *Journal of Investigative Dermatology*. 112, p. 618-618 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor-C expression in human prostatic carcinoma and its relationship to lymph node metastasis

Tsurusaki, T., Kanda, S., Sakai, H., Kanetake, H., Saito, Y., Alitalo, K. & Koji, T., 1999, In: *British Journal of Cancer*. 80, p. 309-313 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor-C stimulates the migration and proliferation of Kaposi's sarcoma cells

Marchio, S., Primo, L., Pagano, M., Palestro, G., Albini, A., Veikkola, T., Cascone, I., Alitalo, K. & Bussolino, F., 1999, In: *Journal of Biological Chemistry*. 274, p. 27617-27622 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor is bound in amniotic fluid and maternal serum

Vuorela-Vepsalainen, P., Alfthan, H., Orpana, A., Alitalo, K., Stenman, U. H. & Halmesmaki, E., 1999, In: *Human Reproduction*. 14, 5, p. 1346-1351 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factors are differentially regulated by steroid hormones and antiestrogens in breast cancer cells

Ruohola, J. K., Valve, E. M., Karkkainen, M. J., Joukov, V., Alitalo, K. & Harkonen, P. L., 1999, In: *Molecular and Cellular Endocrinology*. 149, p. 29-40 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGFR-3 and its ligand VEGF-C are associated with angiogenesis in breast cancer

Valtola, R., Salven, P., Heikkila, P., Taipale, J., Joensuu, H., Rehn, M., Pihlajaniemi, T., Weich, H., deWaal, R. & Alitalo, K., 1999, In: *The American Journal of Pathology*. 154, p. 1381-1390 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1998

Analysis of patients with craniosynostosis syndromes for a Pro246Arg mutation in FGFR4

Gaudenz, K., Roessler, E., Vainikka, S., Alitalo, K. & Muenke, M., 1998, In: *Molecular Genetics and Metabolism*. 64, p. 76-79 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

A recombinant mutant vascular endothelial growth factor-C that has lost vascular endothelial growth factor receptor-2 binding, activation, and vascular permeability activities
Joukov, V., Kumar, V., Sorsa, T., Arighi, E., Weich, H., Saksela, O. & Alitalo, K., 1998, In: Journal of Biological Chemistry. 273, p. 6599-6602 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Avian VEGF-C: cloning, embryonic expression pattern and stimulation of the differentiation of VEGFR2-expressing endothelial cell precursors

Eichmann, A., Corbel, C., Jaffredo, T., Breant, C., Joukov, V., Kumar, V., Alitalo, K. & le Douarin, N. M., 1998, In: Development. 125, p. 743-752 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Cardiovascular failure in mouse embryos deficient in VEGF receptor-3

Dumont, D. J., Jussila, L., Taipale, J., Lymboussaki, A., Mustonen, T., Pajusola, K., Breitman, M. & Alitalo, K., 1998, In: Science. 282, 5390, p. 946-949 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Co-amplification of a novel cyclophilin-like gene (PPIE) with L-myc in small cell lung cancer cell lines

Kim, J. O., Nau, M. M., Allikian, K. A., Makela, T. P., Alitalo, K., Johnson, B. E. & Kelley, M. J., 1998, In: Oncogene. 17, p. 1019-1026 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Endothelial tie receptor antigen in maternal and cord blood of healthy and preeclamptic subjects

Vuorela, P., Matikainen, M. T., Kuusela, P., Ylikorkala, O., Alitalo, K. & Halmesmaki, E., 1998, In: Obstetrics and Gynecology. 92, p. 179-183 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Expression of the vascular endothelial growth factor C receptor VEGFR-3 in lymphatic endothelium of the skin and in vascular tumors

Lymboussaki, A., Partanen, T. A., Olofsson, B., Thomas-Crusells, J., Fletcher, C. D. M., de Waal, R. M. W., Kaipainen, A. & Alitalo, K., 1998, In: The American Journal of Pathology. 153, p. 395-403 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Lymphatic endothelium and Kaposi's sarcoma spindle cells detected by antibodies against the vascular endothelial growth factor receptor-3

Jussila, L., Valtola, R., Partanen, T. A., Salven, P., Heikkila, P., Matikainen, M. T., Renkonen, R., Kaipainen, A., Detmar, M., Tschachler, E., Alitalo, R. & Alitalo, K., 1998, In: Cancer Research. 58, p. 1599-1604 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Overexpression of VEGF in testis and epididymis causes infertility in transgenic mice: evidence for nonendothelial targets for VEGF

Korpelainen, E., Kärkkäinen, M., Tenhunen, A., Lakso, M., Rauvala, H., Vierula, M., Parvinen, M. & Alitalo, K., 1998, In: Journal of Cell Biology. 143, 6, p. 1705-1712 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Peripheral blood platelets express VEGF-C and VEGF which are released during platelet activation

Wartiovaara, U., Salven, P., Mikkola, H., Lassila, R., Kaukonen, J., Joukov, V., Orpana, A., Ristimäki, A., Heikinheimo, M., Joensuu, H., Alitalo, K. & Palotie, A., 1998, In: Journal of thrombosis and haemostasis. 80, p. 171-175 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Proinflammatory cytokines regulate expression of the lymphatic endothelial mitogen vascular endothelial growth factor-C

Ristimäki, A., Narko, K., Enholm, B., Joukov, V. & Alitalo, K., 1998, In: *Journal of Biological Chemistry*. 273, p. 8413-8418 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Similarities between TNF and exogenous oxidants on the cytotoxic response of c-Myc-expressing fibroblasts in vitro

Kinnula, V. L., Aito, H., Klefström, J., Alitalo, K. & Raivio, K. O., 1998, In: *Cancer Letters*. 125, 1-2, p. 191-198 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor (VEGF)-C synergizes with basic fibroblast growth factor and VEGF in the induction of angiogenesis in vitro and alters endothelial cell extracellular proteolytic activity

Pepper, M. S., Mandriota, S. J., Jeltsch, M., Kumar, V. & Alitalo, K., 1998, In: *Journal of Cellular Physiology*. 177, p. 439-452 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor B (VEGF-B) binds to VEGF receptor-1 and regulates plasminogen activator activity in endothelial cells

Olofsson, B., Korpelainen, E., Pepper, M. S., Mandriota, S. J., Aase, K., Kumar, V., Gunji, Y., Jeltsch, M., Shibuya, M., Alitalo, K. & Eriksson, U., 29 Sep 1998, In: *Proceedings of the National Academy of Sciences of the United States of America*. 1998/95, 20, p. 11709-11714 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Article has an altmetric score of 6

Vascular endothelial growth factor C induces angiogenesis in vivo

Cao, Y. H., Linden, P., Farnebo, J., Cao, R. H., Eriksson, A., Kumar, V., Qi, J. H., Claesson-Welsh, L. & Alitalo, K., 1998, In: *Proceedings of the National Academy of Sciences of the United States of America*. 95, p. 14389-14394 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor D (VEGF-D) is a ligand for the tyrosine kinases VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4)

Achen, M. G., Jeltsch, M., Kukk, E., Mäkinen, T., Vitali, A., Wilks, A. F., Alitalo, K. & Stacker, S. A., 1998, In: *Proceedings of the National Academy of Sciences of the United States of America*. 95, p. 548-553 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factors VEGF-B and VEGF-C are expressed in human tumors

Salven, P., Lymboussaki, A., Heikkilä, P., Jaaskela-Saari, H., Enholm, B., Aase, K., von Euler, G., Eriksson, U., Alitalo, K. & Joensuu, H., 1998, In: *The American Journal of Pathology*. 153, p. 103-108 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGF-B binds to VEGFR-1 and regulates plasminogen activator activity in endothelial cells

Olofsson, B., Korpelainen, E., Pepper, M. S., Mandriota, S. J., Kumar, V., Aase, K. A. Y., Gunji, Y., Alitalo, K. & Eriksson, U., 1998, In: *Molecular Biology of the Cell*. 9, p. 114A-114A 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Analysis of Tie receptor tyrosine kinase in haemopoietic progenitor and leukaemia cells
Kukk, E., Wartiovaara, U., Gunji, Y., Kaukonen, J., Buhning, H. J., Rappold, I., Matikainen, M. T., Vihko, P., Partanen, J., Palotie, A., Alitalo, K. & Alitalo, R., 1997, In: *British Journal of Haematology*. 98, p. 195-203 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

BCL2 overexpression associated with chromosomal amplification in diffuse large B-cell lymphoma
Monni, O., Joensuu, H., Franssila, K., Klefström, J., Alitalo, K. & Knuutila, S., 1997, In: *Blood*. 90, p. 1168-1174 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Bmx tyrosine kinase is specifically expressed in the endocardium and the endothelium of large arteries

Ekman, N., Lymboussaki, A., Vastrik, I., Sarvas, K., Kaipainen, A. & Alitalo, K., 1997, In: *Circulation*. 96, p. 1729-1732 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Comparison of VEGF, VEGF-B, VEGF-C and Ang-1 mRNA regulation by serum, growth factors, oncoproteins and hypoxia

Enholm, B., Paavonen, K., Ristimäki, A., Kumar, V., Gunji, Y., Klefström, J., Kivinen, L., Laiho, M., Olofsson, B., Joukov, V., Eriksson, U. & Alitalo, K., 1997, In: *Oncogene*. 14, p. 2475-2483 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Expression of vascular endothelial growth factor and placenta growth factor in human placenta
Vuorela, P., Hatva, E., Lymboussaki, A., Kaipainen, A., Joukov, V., Persico, M. G., Alitalo, K. & Halmesmaki, E., 1997, In: *Biology of Reproduction*. 56, p. 489-494 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Functional and phenotypic characterization of cord blood and bone marrow subsets expressing FLT3 (CD135) receptor tyrosine kinase

Rappold, I., Ziegler, B. L., Kohler, I., Marchetto, S., Rosnet, O., Birnbaum, D., Simmons, P. J., Zannettino, A. C. W., Hill, B., Neu, S., Knapp, W., Alitalo, R., Alitalo, K., Ullrich, A., Kanz, L. & Buhning, H. J., 1997, In: *Blood*. 90, p. 111-125 15 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Genomic organization of human and mouse genes for vascular endothelial growth factor C

Chilov, D., Kukk, E., Taira, S., Jeltsch, M., Kaukonen, J., Palotie, A., Joukov, V. & Alitalo, K., 1997, In: *Journal of Biological Chemistry*. 272, p. 25176-25183 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Hyperplasia of lymphatic vessels in VEGF-C transgenic mice

Jeltsch, M., Kaipainen, A., Joukov, V., Meng, X. J., Lakso, M., Rauvala, H., Swartz, M., Fukumura, D., Jain, R. K. & Alitalo, K., 1997, In: *Science*. 276, p. 1423-1425 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Identification of Csk tyrosine phosphorylation sites and a tyrosine residue important for kinase domain structure

Joukov, V., Vihinen, M., Vainikka, S., Sowadski, J. M., Alitalo, K. & Bergman, M., 1997, In: *Biochemical Journal*. 322, p. 927-935 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Induction of TNF-sensitive cellular phenotype by c-myc involves p53 and impaired NF-kappa B activation

Klefström, J., Arighi, E., Littlewood, T., Jaattela, M., Saksela, E., Evan, G. I. & Alitalo, K., 1997, In: EMBO Journal. 16, p. 7382-7392 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Proteolytic processing regulates receptor specificity and activity of VEGF-C

Joukov, V., Sorsa, T., Kumar, V., Jeltsch, M., ClaessonWelsh, L., Cao, Y. H., Saksela, O., Kalkkinen, N. & Alitalo, K., 1997, In: EMBO Journal. 16, p. 3898-3911 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Serum vascular endothelial growth factor is often elevated in disseminated cancer

Salven, P., Maenpaa, H., Orpana, A., Alitalo, K. & Joensuu, H., 1997, In: Clinical Cancer Research. 3, p. 647-651 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The Bmx tyrosine kinase induces activation of the stat signaling pathway, which is specifically inhibited by protein kinase C delta

Saharinen, P., Ekman, N., Sarvas, K., Parker, P., Alitalo, K. & Silvennoinen, O., 1997, In: Blood. 90, p. 4341-4353 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factors VEGF-B and VEGF-C

Joukov, V., Kaipainen, A., Jeltsch, M., Pajusola, K., Olofsson, B., Kumar, V., Eriksson, U. & Alitalo, K., 1997, In: Journal of Cellular Physiology. 1997/173, p. 211-215 5 p.

Research output: Contribution to journal › Review Article › peer-review

Article has an altmetric score of 3

VEGF and VEGF-C: Specific induction of angiogenesis and lymphangiogenesis in the differentiated avian chorioallantoic membrane

Oh, S. J., Jeltsch, M. M., Birkenhager, R., McCarthy, J. E. G., Weich, H. A., Christ, B., Alitalo, K. & Wilting, J., 1997, In: Developmental Biology. 188, p. 96-109 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1996

A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases (vol 15, pg 290, 1996)

Joukov, V., Pajusola, K., Kaipainen, A., Chilov, D., Lahtinen, I., Kukk, E., Saksela, O., Kalkkinen, N. & Alitalo, K., 1996, In: EMBO Journal. 15, p. 1751-1751 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Association of a 85-kDa serine kinase with activated fibroblast growth factor receptor-4

Vainikka, S., Joukov, V., Klint, P. & Alitalo, K., 1996, In: Journal of Biological Chemistry. 271, p. 1270-1273 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

BMX tyrosine kinase gene is expressed in granulocytes and myeloid leukaemias

Kaukonen, J., Lahtinen, I., Laine, S., Alitalo, K. & Palotie, A., 1996, In: British Journal of Haematology. 94, p. 455-460 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Endothelial Tie growth factor receptor provides antigenic marker for assessment of breast cancer angiogenesis

Salven, P., Joensuu, H., Heikkilä, P., Matikainen, M. T., Wasenius, V. M., Alanko, A. & Alitalo, K., 1996, In: British Journal of Cancer. 74, p. 69-72 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Expression of growth factors and growth factor receptors in capillary hemangioblastoma
Bohling, T., Hatva, E., Kujala, M., ClaessonWelsh, L., Alitalo, K. & Haltia, M., 1996, In: Journal of Neuropathology and Experimental Neurology. 55, p. 522-527 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Genomic organization of the mouse and human genes for vascular endothelial growth factor B (VEGF-B) and characterization of a second splice isoform

Olofsson, B., Pajusola, K., vonEuler, G., Chilov, D., Alitalo, K. & Eriksson, U., 1996, In: Journal of Biological Chemistry. 271, p. 19310-19317 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Novel human vascular endothelial growth factor genes VEGF-B and VEGF-C localize to chromosomes 11q13 and 4q34, respectively

Paavonen, K., HorelliKuitunen, N., Chilov, D., Kukk, E., Pennanen, S., Kallioniemi, O. P., Pajusola, K., Olofsson, B., Eriksson, U., Joukov, V., Palotie, A. & Alitalo, K., 1996, In: Circulation . 93, p. 1079-1082 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The tie receptor tyrosine kinase is expressed by human hematopoietic progenitor cells and by a subset of megakaryocytic cells

Batard, P., Sansilvestri, P., Scheinecker, C., Knapp, W., Debili, N., Vainchenker, W., Buhning, H. J., Monier, M. N., Kukk, E., Partanen, J., Matikainen, M. T., Alitalo, R., Hatzfeld, J. & Alitalo, K., 1996, In: Blood. 87, p. 2212-2220 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Tie endothelial cell-specific receptor tyrosine kinase is upregulated in the vasculature of arteriovenous malformations

Hatva, E., Jaaskelainen, J., Hirvonen, H., Alitalo, K. & Haltia, M., 1996, In: Journal of Neuropathology and Experimental Neurology. 55, p. 1124-1133 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular endothelial growth factor B, a novel growth factor for endothelial cells

Olofsson, B., Pajusola, K., Kaipainen, A., vonEuler, G., Joukov, V., Saksela, O., Orpana, A., Petersson, R. F., Alitalo, K. & Eriksson, U., 1996, In: Proceedings of the National Academy of Sciences of the United States of America. 93, p. 2576-2581 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Vascular growth factors and receptors in capillary hemangioblastomas and hemangiopericytomas

Hatva, E., Bohling, T., Jaaskelainen, J., Persico, M. G., Haltia, M. & Alitalo, K., 1996, In: American Journal of Surgical Pathology. 148, p. 763-775 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

VEGF-C receptor binding and pattern of expression with VEGFR-3 suggests a role in lymphatic vascular development

Kukk, E., Lymboussaki, A., Taira, S., Kaipainen, A., Jeltsch, M., Joukov, V. & Alitalo, K., 1996, In: Sustainable Development. 122, p. 3829-3837 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1995

ANDROGEN AND FIBROBLAST GROWTH-FACTOR (FGF) REGULATION OF FGF RECEPTORS S115 MOUSE MAMMARY-TUMOR CELLS

RUOHOLA, J. K., VALVE, E. M., VAINIKKA, S., ALITALO, K. & HARKONEN, P. L., 1995, In: Endocrinology. 136, p. 2179-2188 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

CELL-TRANSFORMATION BY C-HA-RAS(VAL12) ONCOGENE IS ACCOMPANIED BY A DECREASE IN HISTONE H1-DEGREES AND AN INCREASE IN NUCLEOSOMAL REPEAT LENGTH

LAITINEN, J., SISTONEN, L., ALITALO, K. & HOLTITA, E., 1995, In: Journal of Cellular Biochemistry. 57, p. 111 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

DETERMINATION OF SEQUENCES RESPONSIBLE FOR THE DIFFERENTIAL REGULATION OF MYC FUNCTION BY DELTA-MAX AND MAX

VASTRIK, I., MAKELA, T. P., KOSKINEN, P. J. & ALITALO, K., 1995, In: Oncogene. 11, p. 553-560 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

ENDOTHELIAL-SPECIFIC GENE-EXPRESSION DIRECTED BY THE TIE GENE PROMOTER IN-VIVO

KORHONEN, J., LAHTINEN, I., HALMEKYTO, M., ALHONEN, L., JANNE, J., DUMONT, D. & ALITALO, K., 1995, In: Blood. 86, p. 1828-1835 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

EXPRESSION OF ENDOTHELIAL CELL-SPECIFIC RECEPTOR TYROSINE KINASES AND GROWTH-FACTORS IN HUMAN BRAIN-TUMORS

HATVA, E., KAIPAINEN, A., MENTULA, P., JAASKELAINEN, J., PAETAU, A., HALTIA, M. & ALITALO, K., 1995, In: American Journal of Clinical Pathology. 146, p. 368-378 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

EXPRESSION OF THE FMS-LIKE TYROSINE KINASE-4 GENE BECOMES RESTRICTED TO LYMPHATIC ENDOTHELIUM DURING DEVELOPMENT

KAIPAINEN, A., KORHONEN, J., MUSTONEN, T., VANHINSBERGH, V. W. M., FANG, G. H., DUMONT, D., BREITMAN, M. & ALITALO, K., 1995, In: Proceedings of the National Academy of Sciences of the United States of America. 92, p. 3566-3570 5 p.

Research output: Contribution to journal > Article > Scientific > peer-review

EXPRESSION OF THE MAD GENE DURING CELL-DIFFERENTIATION IN-VIVO AND ITS INHIBITION OF CELL-GROWTH IN-VITRO

VASTRIK, I., KAIPAINEN, A., PENTTILA, T. L., LYMBOUSSAKIS, A., ALITALO, R., PARVINEN, M. & ALITALO, K., 1995, In: Journal of Cell Biology. 128, p. 1197-1208 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

IDENTIFICATION OF YAC CLONES FOR HUMAN-CHROMOSOME 1P32 AND PHYSICAL MAPPING OF THE INFANTILE NEURONAL CEROID-LIPOFUSCINOSIS (INCL) LOCUS

HELLSTEN, E., VESA, J., HEISKANEN, M., MAKELA, T. P., JARVELA, I., COWELL, J. K., MEAD, S., ALITALO, K., PALOTIE, A. & PELTONEN, L., 1995, In: Genomics. 25, p. 404-412 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

MECHANICALLY STRETCHED CHROMOSOMES AS TARGETS FOR HIGH-RESOLUTION FISH MAPPING

LAAN, M., KALLIONIEMI, O. P., HELLSTEN, E., ALITALO, K., Palotie, L. & PALOTIE, A., 1995, In: Genome Research. 5, p. 13-20 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

OVEREXPRESSED CSK TYROSINE KINASE IS LOCALIZED IN FOCAL ADHESIONS, CAUSES REORGANIZATION OF ALPHA(V)BETA(5) INTEGRIN, AND INTERFERES WITH HELA-CELL SPREADING

BERGMAN, M., JOUKOV, V., VIRTANEN, I. & ALITALO, K., 1995, In: *Molecular and Cellular Biology*. 15, p. 711-722 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The rearranged L-myc fusion gene (RLF) encodes a Zn-15 related zinc finger protein

Makela, T. P., Hellsten, E., Vesa, J., Hirvonen, H., Palotie, A., Palotie, L. & Alitalo, K., 1995, In: *Oncogene*. 11, p. 2699-2704 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

THE RECEPTOR TYROSINE KINASE TIE IS REQUIRED FOR INTEGRITY AND SURVIVAL OF VASCULAR ENDOTHELIAL-CELLS

PURI, M. C., ROSSANT, J., ALITALO, K., BERNSTEIN, A. & PARTANEN, J., 1995, In: *EMBO Journal*. 14, p. 5884-5891 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

VASCULARIZATION OF THE MOUSE EMBRYO - A STUDY OF FLK-1, TEK, TIE, AND VASCULAR ENDOTHELIAL GROWTH-FACTOR EXPRESSION DURING DEVELOPMENT
DUMONT, D. J., FONG, G. H., PURI, M. C., GRADWOHL, G., ALITALO, K. & BREITMAN, M. L., 1995, In: *Developmental Dynamics*. 203, p. 80-92 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

VISUAL MAPPING BY FIBER-FISH

HEISKANEN, M., HELLSTEN, E., KALLIONIEMI, O. P., MAKELA, T. P., ALITALO, K., Palotie, L. & PALOTIE, A., 1995, In: *Genomics*. 30, p. 31-36 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

1994

BMX, A NOVEL NONRECEPTOR TYROSINE KINASE GENE OF THE BTK/ITK/TEC/TXK FAMILY LOCATED IN CHROMOSOME XP22.2

TAMAGNONE, L., LAHTINEN, I., MUSTONEN, T., VIRTANEVA, K., FRANCIS, F., MUSCATELLI, F., ALITALO, R., SMITH, C. I. E., LARSSON, C. & ALITALO, K., 1994, In: *Oncogene*. 9, p. 3683-3688 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

C-MYC INDUCES CELLULAR-SUSCEPTIBILITY TO THE CYTOTOXIC ACTION OF TNF-ALPHA

Klefström, J., VASTRIK, I., SAKSELA, E., VALLE, J., EILERS, M. & ALITALO, K., 1994, In: *EMBO Journal*. 13, p. 5442-5450 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Enhanced expression of the tie receptor tyrosine kinase messenger RNA in the vascular endothelium of metastatic melanomas

Kaipainen, A., Vlaykova, T., Hatva, E., Böhling, T., Jekunen, A. P., Pyrhönen, S. & Alitalo, K., 1994, In: *Cancer Research*. 54, 24, p. 6571-6577 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

EXPRESSION OF A RLF L-MYC MINIGENE INHIBITS DIFFERENTIATION OF EMBRYONIC STEM-CELLS AND EMBROID BODY FORMATION

MACLEANHUNTER, S., MAKELA, T. P., GRZESCHICZEK, A., ALITALO, K. & MOROY, T., 1994, In: *Oncogene*. 9, p. 3509-3517 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

MAX ACTIVITY IS AFFECTED BY PHOSPHORYLATION AT 2 NH₂-TERMINAL SITES
KOSKINEN, P. J., VASTRIK, I., MAKELA, T. P., EISENMAN, R. N. & ALITALO, K., 1994, In:
Cell Growth & Differentiation . 5, p. 313-320 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

RAK, A NOVEL NUCLEAR TYROSINE KINASE EXPRESSED IN EPITHELIAL-CELLS
CANCE, W. G., CRAVEN, R. J., BERGMAN, M., XU, L. H., ALITALO, K. & LIU, E. T., 1994, In:
Cell Growth & Differentiation . 5, p. 1347-1355 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

RAPID AND EFFICIENT PURIFICATION OF SRC HOMOLOGY-2 DOMAIN-CONTAINING
PROTEINS - FYN, CSK AND PHOSPHATIDYLINOSITOL 3-KINASE P85
KOEGL, M., KYPTA, R. M., BERGMAN, M., ALITALO, K. & COURTNEIDGE, S. A., 1994, In:
Biochemical Journal. 302, p. 737-744 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REPRESSION OF CYCLIN D1 - A NOVEL FUNCTION OF MYC
PHILIPP, A., SCHNEIDER, A., VASRIK, I., FINKE, K., XIONG, Y., BEACH, D., ALITALO, K. &
EILERS, M., 1994, In: Molecular and Cellular Biology. 14, p. 4032-4043 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

SIGNALING PROPERTIES OF FLT4, A PROTEOLYTICALLY PROCESSED RECEPTOR
TYROSINE KINASE RELATED TO 2 VEGF RECEPTORS
PAJUSOLA, K., APRELIKOVA, O., PELICCI, G., WEICH, H., CLAEISSONWELSH, L. &
ALITALO, K., 1994, In: Oncogene. 9, p. 3545-3555 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

SIGNAL-TRANSDUCTION BY FIBROBLAST GROWTH-FACTOR RECEPTOR-4 (FGFR-4) -
COMPARISON WITH FGFR-1
VAINIKKA, S., JOUKOV, V., WENNSTROM, S., BERGMAN, M., PELICCI, P. G. & ALITALO,
K., 1994, In: Journal of Biological Chemistry. 269, p. 18320-18326 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

TCR/CD3-TRIGGERING CAUSES INCREASED ACTIVITY OF THE P50(CSK) TYROSINE
KINASE AND ENGAGEMENT OF ITS SH2 DOMAIN
OETKEN, C., COUTURE, C., BERGMAN, M., BONNEFOYBERARD, N., WILLIAMS, S.,
ALITALO, K., BURN, P. & MUSTELIN, T., 1994, In: Oncogene. 9, p. 1625-1631 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE MOUSE TIE RECEPTOR TYROSINE KINASE GENE - EXPRESSION DURING
EMBRYONIC ANGIOGENESIS
KORHONEN, J., POLVI, A., PARTANEN, J. & ALITALO, K., 1994, In: Oncogene. 9, p. 395-403 9
p.

Research output: Contribution to journal › Article › Scientific › peer-review

TYROSINE PHOSPHORYLATION IF CD45 PHOSPHOTYROSINE PHOSPHATASE BY
P50(CSK) KINASE CREATES A BINDING-SITE FOR P56(LCK) TYROSINE KINASE AND
ACTIVATES THE PHOSPHATASE
AUTERO, M., SAHARINEN, J., PESSAMORIKAWA, T., SOULAROTHUT, M., OETKEN, C.,
GASSMANN, M., BERGMAN, M., ALITALO, K., BURN, P., GAHMBERG, C. G. & MUSTELIN,
T., 1994, In: Molecular and Cellular Biology. 14, p. 1308-1321 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Tyrosine phosphorylation of CD45 phosphotyrosine phosphatase by p50csk kinase creates a binding site for p56lck tyrosine kinase and activates the phosphatase

Autero, M. R. O., Saharinen, J. M. N., Pessa-Morikawa, T. I., Soula-Rothhut, M., Oetken, C., Gassmann, M., Alitalo, K. K., Burn, P., Gahmberg, C. G. & Mustelin, T., 1994, In: Molecular and Cellular Biology. 14, p. 1308-1321

Research output: Contribution to journal > Article > Scientific > peer-review

VASCULAR ENDOTHELIAL GROWTH-FACTOR IS INDUCED IN RESPONSE TO TRANSFORMING GROWTH-FACTOR-BETA IN FIBROBLASTIC AND EPITHELIAL-CELLS
PERTOVAARA, L., KAIPAINEN, A., MUSTONEN, T., ORPANA, A., FERRARA, N., SAKSELA, O. & ALITALO, K., 1994, In: Journal of Biological Chemistry. 269, p. 6271-6274 4 p.

Research output: Contribution to journal > Article > Scientific > peer-review

1993

2 ALTERNATIVE MESSENGER-RNAs CODING FOR THE ANGIOGENIC FACTOR, PLACENTA GROWTH-FACTOR (PlGF), ARE TRANSCRIBED FROM A SINGLE GENE OF CHROMOSOME-14

MAGLIONE, D., GUERRIERO, V., VIGLIETTO, G., FERRARO, M. G., APRELIKOVA, O., ALITALO, K., DELVECCHIO, S., LEI, K. J., CHOU, J. Y. & PERSICO, M. G., 1993, In: Oncogene. 8, p. 925-931 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

2 HUMAN FLT4 RECEPTOR TYROSINE KINASE ISOFORMS WITH DISTINCT CARBOXY-TERMINAL TAILS ARE PRODUCED BY ALTERNATIVE PROCESSING OF PRIMARY TRANSCRIPTS

PAJUSOLA, K., APRELIKOVA, O., ARMSTRONG, E., MORRIS, S. & ALITALO, K., 1993, In: Oncogene. 8, p. 2931-2937 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

A SUB-SET OF IMMEDIATE-EARLY MESSENGER-RNAs INDUCED BY TUMOR-NECROSIS-FACTOR-ALPHA DURING CELLULAR CYTOTOXIC AND NONCYTOTOXIC RESPONSES

Klefström, J., KOSKINEN, P. J., SAKSELA, E., JAATTELA, M., BRAVO, R. & ALITALO, K., 1993, In: International Journal of Cancer. 55, p. 655-659 5 p.

Research output: Contribution to journal > Article > Scientific > peer-review

ENHANCED BFGF GENE-EXPRESSION IN RESPONSE TO TRANSFORMING GROWTH-FACTOR-BETA STIMULATION OF AKR-2B CELLS

PERTOVAARA, L., SAKSELA, O. & ALITALO, K., 1993, In: Growth Factors. 9, p. 81-86 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

FIBROBLAST GROWTH FACTOR-MEDIATED GROWTH-REGULATION AND RECEPTOR EXPRESSION IN EMBRYONAL CARCINOMA AND EMBRYONIC STEM-CELLS AND HUMAN GERM-CELL TUMORS

MUMMERY, C. L., VANROOYEN, M., BRACKE, M., VANDENEIJNDENVANRAAIJ, J., VANZOELLEN, E. J. & ALITALO, K., 1993, In: Biochemical and Biophysical Research Communications. 191, p. 188-195 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

FLT4 RECEPTOR TYROSINE KINASE GENE-MAPPING TO CHROMOSOME BAND 5Q35 IN RELATION TO THE T(2 5), T(5 6), AND T(3 5) TRANSLOCATIONS

ARMSTRONG, E., KASTURY, K., APRELIKOVA, O., BULLRICH, F., NEZELOF, C., GOGUSEV, J., WASMUTH, J. J., ALITALO, K., MORRIS, S. & HUEBNER, K., 1993, In: Genes, Chromosomes & Cancer. 7, p. 144-151 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

MODULATION OF FIBROBLAST GROWTH-FACTOR RECEPTOR EXPRESSION AND SIGNALING DURING RETINOIC ACID-INDUCED DIFFERENTIATION OF TERA-2 TERATOCARCINOMA CELLS

PERTOVAARA, L., TIENARI, J., VAINIKKA, S., PARTANEN, J., SAKSELA, O., LEHTONEN, E. & ALITALO, K., 1993, In: Biochemical and Biophysical Research Communications. 191, p. 149-156 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REFINED ASSIGNMENT OF THE INFANTILE NEURONAL CEROID-LIPOFUSCINOSIS (INCL, CLN1) LOCUS AT 1P32 - INCORPORATION OF LINKAGE DISEQUILIBRIUM IN MULTIPOINT ANALYSIS

HELLSTEN, E., VESA, J., SPEER, M. C., MAKELA, T. P., JARVELA, I., ALITALO, K., OTT, J. & PELTONEN, L., 1993, In: Genomics. 16, p. 720-725 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE HUMAN RYK CDNA SEQUENCE PREDICTS A PROTEIN CONTAINING 2 PUTATIVE TRANSMEMBRANE SEGMENTS AND A TYROSINE KINASE CATALYTIC DOMAIN

TAMAGNONE, L., PARTANEN, J., ARMSTRONG, E., LASOTA, J., OHGAMI, K., TAZUNOKI, T., LAFORGIA, S., HUEBNER, K. & ALITALO, K., 1993, In: Oncogene. 8, p. 2009-2014 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE HUMAN TYR03 GENE AND PSEUDOGENE ARE LOCATED IN CHROMOSOME 15Q14-Q25

POLVI, A., ARMSTRONG, E., LAI, C., LEMKE, G., HUEBNER, K., SPRITZ, R. A., GUIDA, L. C., NICHOLLS, R. D. & ALITALO, K., 1993, In: Gene. 134, p. 289-293 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE RELATED FLT4, FLT1, AND KDR RECEPTOR TYROSINE KINASES SHOW DISTINCT EXPRESSION PATTERNS IN HUMAN FETAL ENDOTHELIAL-CELLS

KAIPAINEN, A., KORHONEN, J., PAJUSOLA, K., APRELIKOVA, O., PERSICO, M. G., TERMAN, B. I. & ALITALO, K., 1993, In: Journal of Experimental Medicine. 178, p. 2077-2088 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1992

ACTIVATION OF PROTEIN-KINASE-C INCREASES PHOSPHORYLATION OF THE L-MYC TRANSACTIVATOR DOMAIN AT A GSK-3 TARGET SITE

SAKSELA, K., MAKELA, T. P., HUGHES, K., WOODGETT, J. R. & ALITALO, K., 1992, In: Oncogene. 7, p. 347-353 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

AN ALU VARIABLE POLYA REPEAT POLYMORPHISM UPSTREAM OF L-MYC AT 1P32

MAKELA, T. P., HELLSTEN, E., VESA, J., ALITALO, K. & Palotie, L., 1992, In: Human Molecular Genetics. 1, p. 217-217 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

ANALYSIS OF TYROSINE KINASE MESSENGER-RNAS INCLUDING 4 FGF RECEPTOR MESSENGER-RNAS EXPRESSED IN MCF-7 BREAST-CANCER CELLS

LEHTOLA, L., PARTANEN, J., SISTONEN, L., KORHONEN, J., WARRI, A., HARKONEN, P., CLARKE, R. & ALITALO, K., 1992, In: International Journal of Cancer. 50, p. 598-603 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

**A NOVEL ENDOTHELIAL-CELL SURFACE-RECEPTOR TYROSINE KINASE WITH
EXTRACELLULAR EPIDERMAL GROWTH-FACTOR HOMOLOGY DOMAINS**

Partanen, J., Armstrong, E., Mäkelä, T., KORHONEN, J., SANDBERG, M., RENKONEN, R., KNUUTILA, S., HUEBNER, K. & ALITALO, K., 1992, In: *Molecular and Cellular Biology*. 12, 4, p. 1698-1707 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**A RADIATION HYBRID MAP OF 18 GROWTH-FACTOR, GROWTH-FACTOR RECEPTOR,
HORMONE RECEPTOR, OR NEUROTRANSMITTER RECEPTOR GENES ON THE DISTAL
REGION OF THE LONG ARM OF CHROMOSOME-5**

WARRINGTON, J. A., BAILEY, S. K., ARMSTRONG, E., APRELIKOVA, O., ALITALO, K., DOLGANOV, G. M., WILCOX, A. S., SIKELA, J. M., WOLFE, S. F., LOVETT, M. & WASMUTH, J. J., 1992, In: *Genomics*. 13, p. 803-808 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**COMPLEX INTRACHROMOSOMAL REARRANGEMENT IN THE PROCESS OF
AMPLIFICATION OF THE L-MYC GENE IN SMALL-CELL LUNG-CANCER**

SEKIDO, Y., TAKAHASHI, T., MAKELA, T. P., OBATA, Y., UEDA, R., HIDA, T., HIBI, K., SHIMOKATA, K., ALITALO, K. & TAKAHASHI, T., 1992, In: *Molecular and Cellular Biology*. 12, p. 1747-1754 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**ENHANCED EXPRESSION OF THE TIE RECEPTOR TYROSINE KINASE IN ENDOTHELIAL-
CELLS DURING NEOVASCULARIZATION**

KORHONEN, J., PARTANEN, J., ARMSTRONG, E., VAAHTOKARI, A., ELENIOUS, K., JALKANEN, M. & ALITALO, K., 1992, In: *Blood*. 80, p. 2548-2555 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

EXPRESSION OF FGFR-4 MESSENGER-RNA IN DEVELOPING MOUSE-TISSUES

KORHONEN, J., PARTANEN, J. & ALITALO, K., 1992, In: *International Journal of Developmental Biology*. 36, p. 323-329 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**FIBROBLAST GROWTH-FACTOR RECEPTOR-4 SHOWS NOVEL FEATURES IN GENOMIC
STRUCTURE, LIGAND-BINDING AND SIGNAL TRANSDUCTION**

VAINIKKA, S., PARTANEN, J., BELLOSTA, P., COULIER, F., BASILICO, C., JAYE, M. & ALITALO, K., 1992, In: *EMBO Journal*. 11, p. 4273-4280 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

FLT4, A NOVEL CLASS-III RECEPTOR TYROSINE KINASE IN CHROMOSOME 5Q33-QTER

APRELIKOVA, O., PAJUSOLA, K., PARTANEN, J., ARMSTRONG, E., ALITALO, R., BAILEY, S. K., MCMAHON, J., WASMUTH, J., HUEBNER, K. & ALITALO, K., 1992, In: *Cancer Research*. 52, p. 746-748 3 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**FLT4 RECEPTOR TYROSINE KINASE CONTAINS 7 IMMUNOGLOBULIN-LIKE LOOPS AND
IS EXPRESSED IN MULTIPLE HUMAN TISSUES AND CELL-LINES**

PAJUSOLA, K., APRELIKOVA, O., KORHONEN, J., KAIPAINEN, A., PERTOVAARA, L., ALITALO, R. & ALITALO, K., 1992, In: *Cancer Research*. 52, p. 5738-5743 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**LOCALIZATION OF THE FIBROBLAST GROWTH-FACTOR RECEPTOR-4 GENE TO
CHROMOSOME REGION 5Q33-QTER**

Armstrong, E., Partanen, J., CANNIZZARO, L., HUEBNER, K. & ALITALO, K., 1992, In: Genes, Chromosomes & Cancer. 4, 1, p. 94-98 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

PLASMID PLTRPOLY - A VERSATILE HIGH-EFFICIENCY MAMMALIAN EXPRESSION VECTOR

MAKELA, T. P., PARTANEN, J., SCHWAB, M. & ALITALO, K., 1992, In: Gene. 118, p. 293-294 2 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REARRANGEMENT AND CO-AMPLIFICATION OF L-MYC AND RLF IN PRIMARY LUNG-CANCER

MAKELA, T. P., SHIRAISHI, M., BORRELLO, M. G., SEKIYA, T. & ALITALO, K., 1992, In: Oncogene. 7, p. 405-409 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE C-SRC TYROSINE KINASE (CSK) GENE, A POTENTIAL ANTI-ONCOGENE, LOCALIZES TO HUMAN-CHROMOSOME REGION 15Q23-Q25

ARMSTRONG, E., CANNIZZARO, L., BERGMAN, M., HUEBNER, K. & ALITALO, K., 1992, In: Cytogenetics and Cell Genetics. 60, p. 119-120 2 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE HUMAN P50(CSK) TYROSINE KINASE PHOSPHORYLATES P56(LCK) AT TYR-505 AND DOWN REGULATES ITS CATALYTIC ACTIVITY

BERGMAN, M., MUSTELIN, T., OETKEN, C., PARTANEN, J., FLINT, N. A., AMREIN, K. E., AUTERO, M., BURN, P. & ALITALO, K., 1992, In: EMBO Journal. 11, p. 2919-2924 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1991

A FUSION PROTEIN FORMED BY L-MYC AND A NOVEL GENE IN SCLC

MAKELA, T. P., SAKSELA, K., EVAN, G. & ALITALO, K., 1991, In: EMBO Journal. 10, p. 1331-1335 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

BINDING OF A NUCLEAR FACTOR TO THE UPSTREAM REGION OF THE C-MYC GENE

SAKSELA, K., KOSKINEN, P. J. & ALITALO, K., 1991, In: Oncogene Research. 6, p. 73-76 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

CONSTITUTIVELY ACTIVATED NEU ONCOPROTEIN TYROSINE KINASE INTERFERES WITH GROWTH FACTOR-INDUCED SIGNALS FOR GENE ACTIVATION

LEHTOLA, L., SISTONEN, L., KOSKINEN, P., LEHVASLAIHO, H., DIRENZO, M. F., COMOGLIO, P. M. & ALITALO, K., 1991, In: Journal of Cellular Biochemistry. 45, p. 69-81 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

CYL ENCODES A PUTATIVE CYTOPLASMIC TYROSINE KINASE LACKING THE CONSERVED TYROSINE AUTOPHOSPHORYLATION SITE (Y416SRC)

Partanen, J., Armstrong, E., BERGMAN, M., Mäkelä, T., HIRVONEN, H., HUEBNER, K. & ALITALO, K., 1991, In: Oncogene. 6, 11, p. 2013-2018 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

DOWN-REGULATION OF CELLULAR PLATELET-DERIVED GROWTH-FACTOR RECEPTORS INDUCED BY AN ACTIVATED NEU-RECEPTOR TYROSINE KINASE

LEHTOLA, L., NISTER, M., HOLTTA, E., WESTERMARK, B. & ALITALO, K., 1991, In: Cell Regulation. 2, p. 651-661 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

ESTROGEN SUPPRESSION OF ERBB2 EXPRESSION IS ASSOCIATED WITH INCREASED GROWTH-RATE OF ZR-75-1 HUMAN BREAST-CANCER CELLS-INVITRO AND IN NUDE-MICE

WARRI, A. M., LAINE, A. M., MAJASUO, K. E., ALITALO, K. K. & HARKONEN, P. L., 1991, In: International Journal of Cancer. 49, p. 616-623 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

FGFR-4, A NOVEL ACIDIC FIBROBLAST GROWTH-FACTOR RECEPTOR WITH A DISTINCT EXPRESSION PATTERN

Partanen, J., Mäkelä, T., EEROLA, E., KORHONEN, J., HIRVONEN, H., CLAEISSONWELSH, L. & ALITALO, K., 1991, In: EMBO Journal. 10, 6, p. 1347-1354 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

INTRACHROMOSOMAL REARRANGEMENTS FUSING L-MYC AND RLF IN SMALL-CELL LUNG-CANCER

MAKELA, T. P., KERE, J., WINQVIST, R. & ALITALO, K., 1991, In: Molecular and Cellular Biology. 1991, 11, p. 4015-4021 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

NOVEL HUMAN FGF RECEPTORS WITH DISTINCT EXPRESSION PATTERNS

Korhonen, J., Partanen, J., Eerola, E., Vainikka, S., Ilvesmäki, V., Voutilainen, R., Julkunen, M., Mäkelä, T. & Alitalo, K., 20 Dec 1991, In: Annals of the New York Academy of Sciences. 638, p. 403-405 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

NUCLEAR COLOCALIZATION OF CELLULAR AND VIRAL MYC PROTEINS WITH HSP70 IN MYC-OVEREXPRESSING CELLS

KOSKINEN, P. J., SISTONEN, L., EVAN, G., MORIMOTO, R. & ALITALO, K., 1991, In: Journal of Virology. 65, p. 842-851 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

RFLPS IN THE FIBROBLAST GROWTH-FACTOR RECEPTOR-4 LOCUS (FGFR4) IN 5Q33-QTER

Armstrong, E., HASTBACKA, J., Partanen, J., HUEBNER, K. & ALITALO, K., 1991, In: Nucleic Acids Research. 19, 19, p. 5096-5096 1 p.

Research output: Contribution to journal › Article › Scientific

UV DAMAGE AND REPAIR IN THE DOMAIN OF THE HUMAN C-MYC ONCOGENE

BIANCHI, N. O., BIANCHI, M. S., ALITALO, K. & DELACHAPELLE, A., 1991, In: DNA and Cell Biology. 10, p. 125-132 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1990

C-HA-RAS VAL-12 ONCOGENE-TRANSFORMED NIH-3T3 FIBROBLASTS DISPLAY MORE DECONDENSED NUCLEOSOMAL ORGANIZATION THAN NORMAL FIBROBLASTS

LAITINEN, J., SISTONEN, L., ALITALO, K. & HOLTTA, E., 1990, In: Journal of Cell Biology. 111, p. 917 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

DAMAGE AND REPAIR INDUCED BY BLEOMYCIN IN THE DOMAIN OF HUMAN AMPLIFIED MYC ONCOGENES

BIANCHI, N. O., BIANCHI, M. S., LOPEZLARRAZA, D., ALITALO, K. & DELACHAPELLE, A., 1990, In: Cancer Research. 50, p. 2379-2384 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

DOWN-REGULATION OF THE EARLY GENOMIC GROWTH-FACTOR RESPONSE IN NEU ONCOGENE-TRANSFORMED CELLS

SISTONEN, L., KOSKINEN, P. J., LEHVASLAIHO, H., LEHTOLA, L., BRAVO, R. & ALITALO, K., 1990, In: Oncogene. 5, p. 815-821 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

EXPRESSION OF THE MYC PROTOONCOGENES IN DEVELOPING HUMAN FETAL BRAIN

HIRVONEN, H., MAKELA, T. P., SANDBERG, M., KALIMO, H., VUORIO, E. & ALITALO, K., 1990, In: Oncogene. 5, p. 1787-1797 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

INCREASED ERYTHROID POTENTIATING ACTIVITY TISSUE INHIBITOR OF METALLOPROTEINASES AND JUN FOS TRANSCRIPTION FACTOR COMPLEX CHARACTERIZE TUMOR PROMOTER-INDUCED MEGAKARYOBLASTIC DIFFERENTIATION OF K562 LEUKEMIA-CELLS

Alitalo, R., Partanen, J., PERTOVAARA, L., Hölttä, E. J., SISTONEN, L., Andersson, L. C. & ALITALO, K., 1990, In: Blood. 75, 10, p. 1974-1982 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

PUTATIVE TYROSINE KINASES EXPRESSED IN K-562 HUMAN LEUKEMIA-CELLS

Partanen, J., Mäkelä, T., Alitalo, R., LEHVASLAIHO, H. & ALITALO, K., 1990, In: Proceedings of the National Academy of Sciences of the United States of America. 87, 22, p. 8913-8917 5 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 12

REGULATION BY EGF IS MAINTAINED IN AN OVEREXPRESSED CHIMERIC EGFR NEU RECEPTOR TYROSINE KINASE

LEHVASLAIHO, H., SISTONEN, L., DIRENZO, F., Partanen, J., COMOGLIO, P., Hölttä, E. J. & ALITALO, K., 1990, In: Journal of Cellular Biochemistry. 42, 3, p. 123-133 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Article has an altmetric score of 3

SIMILAR EARLY GENE RESPONSES TO LIGAND-ACTIVATED EGFR AND NEU TYROSINE KINASES IN NIH3T3 CELLS

KOSKINEN, P., LEHVASLAIHO, H., MACDONALDBRAVO, H., ALITALO, K. & BRAVO, R., 1990, In: Oncogene. 5, p. 615-618 4 p.

Research output: Contribution to journal > Article > Scientific > peer-review

1989

2 N-MYC POLYPEPTIDES WITH DISTINCT AMINO TERMINI ENCODED BY THE 2ND AND 3RD EXONS OF THE GENE

MAKELA, T. P., SAKSELA, K. & ALITALO, K., 1989, In: Molecular and Cellular Biology. 9, p. 1545-1552 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

A CHIMERIC EGF-R-NEU PROTO-ONCOGENE ALLOWS EGF TO REGULATE NEU TYROSINE KINASE AND CELL-TRANSFORMATION

LEHVASLAIHO, H., LEHTOLA, L., SISTONEN, L. & ALITALO, K., 1989, In: EMBO Journal. 8, p. 159-166 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

ACTIVATION OF AN EGFR NEU CHIMERIC RECEPTOR - EARLY INTRACELLULAR SIGNALS AND CELL-PROLIFERATION RESPONSES

PANDIELLA, A., LEHVASLAIHO, H., MAGNI, M., ALITALO, K. & MELDOLESI, J., 1989, In: *Oncogene*. 4, p. 1299-1305 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

ACTIVATION OF THE NEU TYROSINE KINASE INDUCES THE FOS JUN TRANSCRIPTION FACTOR COMPLEX, THE GLUCOSE TRANSPORTER, AND ORNITHINE DECARBOXYLASE

SISTONEN, L., HOLTTA, E., LEHVASLAIHO, H., LEHTOLA, L. & ALITALO, K., 1989, In: *Journal of Cell Biology*. 109, p. 1911-1919 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

ENHANCED JUN GENE-EXPRESSION IS AN EARLY GENOMIC RESPONSE TO TRANSFORMING GROWTH FACTOR-BETA STIMULATION

PERTOVAARA, L., SISTONEN, L., BOS, T. J., VOGT, P. K., KESKIOJA, J. & ALITALO, K., 1989, In: *Molecular and Cellular Biology*. 9, p. 1255-1262 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

INTERLEUKIN-2 INDUCES A RAPID INCREASE IN ORNITHINE DECARBOXYLASE MESSENGER-RNA IN A CLONED MURINE LYMPHOCYTIC-T CELL-LINE

LEGRAVEREND, C., POTTER, A., HOLTTA, E., ALITALO, K. & ANDERSSON, L. C., 1989, In: *Experimental Cell Research*. 181, p. 273-281 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

MECHANISM OF T-CELL PROLIFERATION INVIVO - ANALYSIS OF IL-2 RECEPTOR EXPRESSION AND ACTIVATION OF C-MYC AND C-MYB ONCOGENES DURING LYMPHATIC REGENERATION

SIHVOLA, M., SISTONEN, L., ALITALO, K. & HURME, M., 1989, In: *Biochemical and Biophysical Research Communications*. 160, p. 181-188 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

ONCOGENE EXPRESSION IN SMALL-CELL LUNG-CANCER CELL-LINES AND A TESTICULAR GERM-CELL TUMOR - ACTIVATION OF THE N-MYC GENE AND DECREASED RB MESSENGER-RNA

SAKSELA, K., MAKELA, T. P. & ALITALO, K., 1989, In: *International Journal of Cancer*. 44, p. 182-185 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

RAPID PHOSPHORYLATION OF THE L-MYC PROTEIN-INDUCED BY PHORBOL ESTER TUMOR PROMOTERS AND SERUM

SAKSELA, K., MAKELA, T. P., EVAN, G. & ALITALO, K., 1989, In: *EMBO Journal*. 8, p. 149-157 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE CELLULAR-RESPONSE TO INDUCTION OF THE P21C-HA-RAS ONCOPROTEIN INCLUDES STIMULATION OF JUN GENE-EXPRESSION

SISTONEN, L., HOLTTA, E., MAKELA, T. P., KESKIOJA, J. & ALITALO, K., 1989, In: *EMBO Journal*. 8, p. 815-822 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE METHYLATION PATTERN OF NORMAL AND TRUNCATED AMPLIFIED HUMAN C-MYC ONCOGENES

BIANCHI, N. O., BIANCHI, M. S., ALITALO, K. & DELACHAPELLE, A., 1989, In: *Biochimica et Biophysica Acta*. 1007, p. 350-355 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

THE N-MYC PROTO-ONCOGENE AND IGF-II GROWTH-FACTOR MESSENGER-RNAS ARE EXPRESSED BY DISTINCT CELLS IN HUMAN-FETAL KIDNEY AND BRAIN

HIRVONEN, H., SANDBERG, M., KALIMO, H., HUKKANEN, V., VUORIO, E., SALMI, T. T. & ALITALO, K., 1989, In: *Journal of Cell Biology*. 108, p. 1093-1104 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

TRANSFORMING GROWTH FACTOR-BETA DOES NOT ALTER INTERLEUKIN-1 EXPRESSION IN CULTURED HUMAN MACROPHAGES

HURME, M., SIHVOLA, M., ALITALO, K. & KESKIOJA, J., 1989, In: *Journal of Cellular Biochemistry*. 39, p. 467-475 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

1988

ENHANCED EXPRESSION OF TGF-BETA AND C-FOS MESSENGER-RNAS IN THE GROWTH PLATES OF DEVELOPING HUMAN LONG BONES

SANDBERG, M., VUORIO, T., HIRVONEN, H., ALITALO, K. & VUORIO, E., 1988, In: *Development*. 102, p. 461-470 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

ENHANCED EXPRESSION OF TRANSFORMING GROWTH FACTOR-BETA DURING MEGAKARYOBLASTIC DIFFERENTIATION OF K562 LEUKEMIA-CELLS

ALITALO, R., MAKELA, T. P., KOSKINEN, P., ANDERSSON, L. C. & ALITALO, K., 1988, In: *Blood*. 71, p. 899-906 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

EXPRESSION OF THE C-HA-RAS AND NEU ONCOGENES IN DMBA-INDUCED, ANTI-ESTROGEN-TREATED RAT MAMMARY-TUMORS

VUORIO, T., WARRI, A., SANDBERG, M., ALITALO, K. & VUORIO, E., 1988, In: *International Journal of Cancer*. 42, p. 774-779 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

THE MECHANISMS OF ORNITHINE DECARBOXYLASE DEREGLATION IN C-HA-RAS ONCOGENE-TRANSFORMED NIH 3T3-CELLS

HOLTTA, E., SISTONEN, L. & ALITALO, K., 1988, In: *Journal of Biological Chemistry*. 263, p. 4500-4507 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

1987

DOSE EFFECTS OF TRANSFECTED C-HA-RASVAL-12 ONCOGENE IN TRANSFORMED-CELL CLONES

SISTONEN, L., KESKIOJA, J., ULMANEN, I., HOLTTA, E., WIKGREN, B. J. & ALITALO, K., 1987, In: *Experimental Cell Research*. 168, p. 518-530 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

INDUCTION OF PLATELET-DERIVED GROWTH-FACTOR GENE-EXPRESSION DURING MEGAKARYOBLASTIC AND MONOCYTIC DIFFERENTIATION OF HUMAN-LEUKEMIA CELL-LINES

ALITALO, R., ANDERSSON, L. C., BETSHOLTZ, C., NILSSON, K., WESTERMARK, B., HELDIN, C. H. & ALITALO, K., 1987, In: *EMBO Journal*. 6, p. 1213-1218 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Mouse and human ornithine decarboxylase genes - methylation polymorphism and amplification
Alhonen-Hongisto, L., Leinonen, P., Sinervirta, R., Laine, R., Winqvist, R., Alitalo, K., Jänne, O. A. & Jänne, J., 1987, In: Biochemical Journal. 242, p. 205-210 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

PLASMINOGEN-ACTIVATOR INHIBITOR TYPE-1 GENE IS LOCATED AT REGION Q21.3-Q22 OF CHROMOSOME-7 AND GENETICALLY LINKED WITH CYSTIC-FIBROSIS
KLINGER, K. W., WINQVIST, R., RICCIO, A., ANDREASEN, P. A., SARTORIO, R., NIELSEN, L. S., STUART, N., STANISLOVITIS, P., WATKINS, P., DOUGLAS, R., GRZESCHIK, K. H., ALITALO, K., BLASI, F. & DANO, K., 1987, In: Proceedings of the National Academy of Sciences of the United States of America. 84, p. 8548-8552 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REGULATION OF PLATELET-DERIVED GROWTH-FACTOR GENE-EXPRESSION BY TRANSFORMING GROWTH-FACTOR-BETA AND PHORBOL ESTER IN HUMAN-LEUKEMIA CELL-LINES

MAKELA, T. P., ALITALO, R., PAULSSON, Y., WESTERMARK, B., HELDIN, C. H. & ALITALO, K., 1987, In: Molecular and Cellular Biology. 7, p. 3656-3662 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1986

HUMAN ORNITHINE DECARBOXYLASE SEQUENCES MAP TO CHROMOSOME REGIONS 2PTER-JP23 AND 7CEN-JQTER BUT ARE NOT COAMPLIFIED WITH THE NMYC ONCOGENE

WINQVIST, R., MAKELA, T. P., SEPPANEN, P., JANNE, O. A., ALHONENHONGISTO, L., JANNE, J., GRZESCHIK, K. H. & ALITALO, K., 1986, In: Cytogenetics and Cell Genetics. 42, p. 133-140 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REARRANGEMENT AT THE 5' END OF AMPLIFIED C-MYC IN HUMAN COLO 320 CELLS IS ASSOCIATED WITH ABNORMAL TRANSCRIPTION

SCHWAB, M., KLEMPNAUER, K. H., ALITALO, K., VARMUS, H. & BISHOP, M., 1986, In: Molecular and Cellular Biology. 6, p. 2752-2755 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1985

ACUTE MYELOGENOUS LEUKEMIA WITH C-MYC AMPLIFICATION AND DOUBLE MINUTE CHROMOSOMES

ALITALO, K., WINQVIST, R., KESKIOJA, J., ILVONEN, M., SAKSELA, K., ALITALO, R., LAIHO, M., KNUUTILA, S. & DELACHAPELLE, A., 1985, In: Lancet. 2, p. 1035-1039 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

AMPLIFICATION AND ENHANCED EXPRESSION OF THE C-MYC ONCOGENE IN MOUSE SEWA TUMOR-CELLS

SCHWAB, M., RAMSAY, G., ALITALO, K., VARMUS, H. E., BISHOP, J. M., MARTINSSON, T., LEVAN, G. & LEVAN, A., 1985, In: Nature. 315, p. 345-347 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

AMPLIFICATION OF ORNITHINE DECARBOXYLASE GENE IN RESPONSE TO POLYAMINE DEPRIVATION IN CHINESE-HAMSTER OVARY CELLS

POHJANPELTO, P., HOLTTA, E., JANNE, O. A., KNUUTILA, S. & ALITALO, K., 1985, In: Journal of Biological Chemistry. 260, p. 8532-8537 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

AMPLIFICATION OF THE C-MYC ONCOGENE IN A SUBPOPULATION OF HUMAN SMALL CELL LUNG-CANCER

SAKSELA, K., BERGH, J., LEHTO, V. P., NILSSON, K. & ALITALO, K., 1985, In: Cancer Research. 45, p. 1823-1827 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

EVIDENCE FOR P15 CLEAVAGE SITE IN MYC-SPECIFIC PROTEINS OF AVIAN MC29 AND OK10 VIRUSES

SOVOVA, V., TRAVNICEK, M., HLOZANEK, I., CERNA, H., ALITALO, K. & VAHERI, A., 1985, In: Journal of Cellular Biochemistry. 28, p. 265-272 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

EVOLUTION OF KARYOTYPIC ABNORMALITIES AND C-MYC ONCOGENE AMPLIFICATION IN HUMAN COLONIC-CARCINOMA CELL-LINES

LIN, C. C., ALITALO, K., SCHWAB, M., GEORGE, D., VARMUS, H. E. & BISHOP, J. M., 1985, In: Chromosoma. 92, p. 11-15 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

MAPPING OF AMPLIFIED C-MYC ONCOGENE, SISTER CHROMATID EXCHANGES, AND KARYOTYPIC ANALYSIS OF THE COLO-205 COLON-CARCINOMA CELL-LINE

WINQVIST, R., KNUUTILA, S., LEPRINCE, D., STEHELIN, D. & ALITALO, K., 1985, In: Cancer Genetics and Cytogenetics. 18, p. 251-264 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REORGANIZATION OF PLASMA MEMBRANE-ASSOCIATED 36000 DALTON PROTEIN UPON DRUG-INDUCED REDISTRIBUTION OF CYTOKERATIN

KESKIOJA, J. & ALITALO, K., 1985, In: Experimental Cell Research. 158, p. 86-94 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1984

ABERRANT EXPRESSION OF AN AMPLIFIED C-MYC ONCOGENE IN 2 CELL-LINES FROM A COLON-CARCINOMA

ALITALO, K., WINQVIST, R., LIN, C. C., DELACHAPELLE, A., SCHWAB, M. & BISHOP, J. M., 1984, In: Proceedings of the National Academy of Sciences of the United States of America. 81, p. 4534-4538 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

DISTRIBUTION OF THE 36000-DALTON TYROSINE PROTEIN-KINASE SUBSTRATE IN DRUG AND EPIDERMAL GROWTH-FACTOR TREATED EPITHELIAL-CELLS

ALITALO, K., RALSTON, R. R. & KESKIOJA, J., 1984, In: Experimental Cell Research. 150, p. 177-185 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE MYC PROTEINS ARE NOT ASSOCIATED WITH CHROMATIN IN MITOTIC CELLS

WINQVIST, R., SAKSELA, K. & ALITALO, K., 1984, In: EMBO Journal. 3, p. 2947-2950 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

TRANSFORMATION OF CULTURED EPITHELIAL-CELLS BY ETHYLNITROSOUREA - ALTERED EXPRESSION OF TYPE-I PROCOLLAGEN CHAINS

KESKIOJA, J., ALITALO, K., HAUTANEN, A. & RAPP, U. R., 1984, In: Biochimica et Biophysica Acta. 803, p. 153-162 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1983

A CELLULAR ONCOGENE (C-KI-RAS) IS AMPLIFIED, OVEREXPRESSED, AND LOCATED WITHIN KARYOTYPIC ABNORMALITIES IN MOUSE ADRENOCORTICAL TUMOR-CELLS
SCHWAB, M., ALITALO, K., VARMUS, H. E., BISHOP, J. M. & GEORGE, D., 1983, In: Nature. 303, p. 497-501 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

AMPLIFIED DNA WITH LIMITED HOMOLOGY TO MYC CELLULAR ONCOGENE IS SHARED BY HUMAN NEURO-BLASTOMA CELL-LINES AND A NEURO-BLASTOMA TUMOR

SCHWAB, M., ALITALO, K., KLEMPNAUER, K. H., VARMUS, H. E., BISHOP, J. M., GILBERT, F., BRODEUR, G., GOLDSTEIN, M. & TRENT, J., 1983, In: Nature. 305, p. 245-248 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

BIOSYNTHESIS OF AN UNUSUAL COLLAGEN TYPE BY HUMAN ASTROCYTOMA-CELLS INVITRO

ALITALO, K., BORNSTEIN, P., VAHERI, A. & SAGE, H., 1983, In: Journal of Biological Chemistry. 258, p. 2653-2661 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

EFFECTS OF ZN²⁺ IONS ON PROTEIN-PHOSPHORYLATION IN EPITHELIAL-CELL MEMBRANES

ALITALO, K., KESKIOJA, J. & BORNSTEIN, P., 1983, In: Journal of Cellular Physiology. 115, p. 305-312 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

HOMOGENEOUSLY STAINING CHROMOSOMAL REGIONS CONTAIN AMPLIFIED COPIES OF AN ABUNDANTLY EXPRESSED CELLULAR ONCOGENE (C-MYC) IN MALIGNANT NEUROENDOCRINE CELLS FROM A HUMAN-COLON CARCINOMA

ALITALO, K., SCHWAB, M., LIN, C. C., VARMUS, H. E. & BISHOP, J. M., 1983, In: Proceedings of the National Academy of Sciences of the United States of America. 80, p. 1707-1711 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

IDENTIFICATION OF NUCLEAR PROTEINS ENCODED BY VIRAL AND CELLULAR MYC ONCOGENES

ALITALO, K., RAMSAY, G., BISHOP, J. M., PFEIFER, S. O., COLBY, W. W. & LEVINSON, A. D., 1983, In: Nature. 306, p. 274-277 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

NUCLEOTIDE-SEQUENCE OF THE V-MYC ONCOGENE OF AVIAN RETROVIRUS MC29

ALITALO, K., BISHOP, J. M., SMITH, D. H., CHEN, E. Y., COLBY, W. W. & LEVINSON, A. D., 1983, In: Proceedings of the National Academy of Sciences of the United States of America. 80, p. 100-104 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

SUBCELLULAR LOCATION OF AN ABUNDANT SUBSTRATE (P36) FOR TYROSINE-SPECIFIC PROTEIN-KINASES

COURTNEIDGE, S., RALSTON, R., ALITALO, K. & BISHOP, J. M., 1983, In: Molecular and Cellular Biology. 3, p. 340-350 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

THE P36 SUBSTRATE OF TYROSINE-SPECIFIC PROTEIN-KINASES CO-LOCALIZES WITH NON-ERYTHROCYTE ALPHA-SPECTRIN ANTIGEN, P230, IN SURFACE LAMINA OF CULTURED FIBROBLASTS

LEHTO, V. P., VIRTANEN, I., PAASIVUO, R., RALSTON, R. & ALITALO, K., 1983, In: EMBO Journal. 2, p. 1701-1705 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1982

BASAL LAMINA GLYCOPROTEINS LAMININ AND TYPE-IV COLLAGEN ARE ASSEMBLED INTO A FINE-FIBERED MATRIX IN CULTURES OF A TERATOCARCINOMA-DERIVED ENDODERMAL CELL-LINE

LEIVO, I., ALITALO, K., RISTELI, L., VAHERI, A., TIMPL, R. & WARTIOVAARA, J., 1982, In: Experimental Cell Research. 137, p. 15-23 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

BIOSYNTHESIS OF TYPE-V PROCOLLAGEN BY A204, A HUMAN RHABDOMYOSARCOMA CELL-LINE

ALITALO, K., MYLLYLÄ, R., SAGE, H., PRITZL, P., VAHERI, A. & BORNSTEIN, P., 1982, In: Journal of Biological Chemistry. 257, p. 9016-9024 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

DEPOSITION OF AN INTERMEDIATE FORM OF PROCOLLAGEN TYPE-III (PN-COLLAGEN) INTO FIBRILS IN THE MATRIX OF AMNIOTIC EPITHELIAL-CELLS

HEDMAN, K., ALITALO, K., LEHTINEN, S., TIMPL, R. & VAHERI, A., 1982, In: EMBO Journal. 1, p. 47-52 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

DEPOSITION OF BASEMENT-MEMBRANE PROTEINS IN ATTACHMENT AND NEURITE FORMATION OF CULTURED MURINE C-1300 NEURO-BLASTOMA CELLS

ALITALO, K., KURKINEN, M., VIRTANEN, I., MELLSTROM, K. & VAHERI, A., 1982, In: Journal of Cellular Biochemistry. 18, p. 25-35 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

ENDOCERVICAL AND ECTOCERVICAL HUMAN UTERINE EPITHELIAL-CELLS DISTINGUISHED BY FIBRONECTIN PRODUCTION AND KERATINIZATION IN CULTURE

ALITALO, K., HALILA, H., VESTERINEN, E. & VAHERI, A., 1982, In: Cancer Research. 42, p. 1142-1146 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

EXTRACELLULAR-MATRIX PROTEINS OF HUMAN EPIDERMAL-KERATINOCYTES AND FEEDER 3T3-CELLS

ALITALO, K., KUISMANEN, E., MYLLYLÄ, R., KIISTALA, U., ASKOSELJAVAARA, S. & VAHERI, A., 1982, In: Journal of Cell Biology. 94, p. 497-505 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

LOSS OF DIFFERENT PERICELLULAR MATRIX COMPONENTS OF RAT-CELLS TRANSFORMED WITH A T-CLASS TS MUTANT OF ROUS-SARCOMA VIRUS

ALITALO, K., KESKI-OJA, J., HEDMAN, K. & VAHERI, A., 1982, In: Virology. 119, p. 347-357 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

PERICELLULAR MATRIX AND CELL-SURFACE GLYCOPROTEINS OF VIRUS-TRANSFORMED MOUSE EPITHELIAL-CELLS

KESKIOJA, J., GAHMBERG, C. G. & ALITALO, K., 1982, In: Cancer Research. 42, p. 1147-1153 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

PERICELLULAR MATRIX IN MALIGNANT TRANSFORMATION

ALITALO, K. & VAHERI, A., 1982, In: Advances in Cancer Research. 37, p. 111-158 48 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REGULATION OF PROLINE 3-HYDROXYLATION AND PROLYL 3-HYDROXYLASE AND 4-HYDROXYLASE ACTIVITIES IN TRANSFORMED-CELLS

MAJAMAA, K., MYLLYLÄ, R., ALITALO, K. & VAHERI, A., 1982, In: Biochemical Journal. 206, p. 499-503 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1981

BASAL LAMINA COMPONENTS IN EXPERIMENTALLY INDUCED SKIN BLISTERS

SAKSELA, O., ALITALO, K., KIISTALA, U. & VAHERI, A., 1981, In: Journal of Investigative Dermatology. 77, p. 283-286 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

EXTRACELLULAR-MATRIX PROTEINS CHARACTERIZE HUMAN-TUMOR CELL-LINES

ALITALO, K., KESKIOJA, J. & VAHERI, A., 1981, In: International Journal of Cancer. 27, p. 755-761 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

POSTTRANSLATIONAL MODIFICATIONS IN THE BIOSYNTHESIS OF TYPE-IV COLLAGEN BY A HUMAN-TUMOR CELL-LINE

PIHLAJANIEMI, T., MYLLYLÄ, R., ALITALO, K., VAHERI, A. & KIVIRIKKO, K. I., 1981, In: Biochemistry. 20, 26, p. 7409-7415 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

REGULATION OF COLLAGEN POST-TRANSLATIONAL MODIFICATION IN TRANSFORMED HUMAN AND CHICK-EMBRYO CELLS

MYLLYLÄ, R., ALITALO, K., VAHERI, A. & KIVIRIKKO, K. I., 1981, In: Biochemical Journal. 196, p. 683-692 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1980

BASAL LAMINA GLYCOPROTEINS ARE PRODUCED BY NEURO-BLASTOMA CELLS

ALITALO, K., KURKINEN, M., VAHERI, A., VIRTANEN, I., ROHDE, H. & TIMPL, R., 1980, In: Nature Malaysiana.. 287, p. 465-466 2 p.

Research output: Contribution to journal › Article › Scientific › peer-review

BIOSYNTHESIS OF 2 SUBUNITS OF TYPE-IV PROCOLLAGEN AND OF OTHER BASEMENT-MEMBRANE PROTEINS BY A HUMAN-TUMOR CELL-LINE

ALITALO, K., VAHERI, A., KRIEG, T. & TIMPL, R., 1980, In: European Journal of Biochemistry. 109, p. 247-255 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

EXTRACELLULAR-MATRIX COMPONENTS SYNTHESIZED BY HUMAN AMNIOTIC EPITHELIAL-CELLS IN CULTURE

ALITALO, K., KURKINEN, M., VAHERI, A., KRIEG, T. & TIMPL, R., 1980, In: Cell. 19, p. 1053-1062 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

FIBRONECTIN IS PRODUCED BY HUMAN MACROPHAGES

ALITALO, K., HOVI, T. & VAHERI, A., 1980, In: Journal of Experimental Medicine. 151, p. 602-613 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

INDUCTION OF A BASEMENT-MEMBRANE GLYCOPROTEIN IN EMBRYONIC KIDNEY - POSSIBLE ROLE OF LAMININ IN MORPHOGENESIS

EKBLOM, P., ALITALO, K., VAHERI, A., TIMPL, R. & SAXEN, L., 1980, In: Proceedings of the National Academy of Sciences of the United States of America. 77, p. 485-489 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

PRODUCTION OF BOTH INTERSTITIAL AND BASEMENT-MEMBRANE PROCOLLAGENS BY FIBROBLASTIC WI-38 CELLS FROM HUMAN-EMBRYONIC LUNG

ALITALO, K., 1980, In: Biochemical and Biophysical Research Communications. 93, p. 873-880 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1979

FIBRONECTIN AND PROCOLLAGEN PRODUCED BY A CLONAL LINE OF SCHWANN-CELLS

KURKINEN, M. & ALITALO, K., 1979, In: FEBS Letters. 102, p. 64-68 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

FIBRONECTIN IN THE DEVELOPMENT OF EMBRYONIC CHICK EYE

KURKINEN, M., ALITALO, K., VAHERI, A., STENMAN, S. & SAXEN, L., 1979, In: Developmental Biology. 69, p. 589-600 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

ISOLATION OF THE PERICELLULAR MATRIX OF HUMAN FIBROBLAST-CULTURES

HEDMAN, K., KURKINEN, M., ALITALO, K., VAHERI, A., JOHANSSON, S. & HOOK, M., 1979, In: Journal of Cell Biology. 81, p. 83-91 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

TYPE-III PROCOLLAGEN IS THE MAJOR COLLAGENEOUS COMPONENT PRODUCED BY A CONTINUOUS RHABDOMYOSARCOMA CELL-LINE

KRIEG, T., TIMPL, R., ALITALO, K., KURKINEN, M. & VAHERI, A., 1979, In: FEBS Letters. 104, p. 405-409 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

1977

CLEAR-CELL SARCOMA OF TENDONS AND APONEUROSES - REPORT OF 2 CASES

ALITALO, K., PAAVOLAINEN, P., FRANSSILA, K. & RITSILA, V., 1977, In: Acta orthopaedica Scandinavica. Supplementum. 48, p. 241-244 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review