European Patent Office

SUPPLEMENTARY PARTIAL EUROPEAN SEARCH REPORT

which under Rule 45 of the European Patent Convention shall be considered, for the purposes of subsequent proceedings, as the European search report

Application Number EP 03 71 3942

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	ISHIKAWA K ET AL: "Prediction of the coding sequences of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins in vitro" DNA RESEARCH, UNIVERSAL ACADEMY PRESS, JP, vol. 5, 30 June 1998 (1998-06-30), pages 169-176, XP002089186 ISSN: 1340-2838 especially KIAA0626* figures 1,2 *	18, 20-23, 28,54, 62-64	INV. C12Q1/68 G01N33/574 C07K14/47 ADD. C12N5/10 C07K16/18
A	BREITENEDER-GELEFF S ET AL: "Angiosarcomas express mixed endothelial phenotypes of blood and lymphatic capillaries podoplanin as a specific marker for lymphatic endothelium" AMERICAN JOURNAL OF PATHOLOGY, PHILADELPHIA, PA, US, vol. 154, no. 2, February 1999 (1999-02), pages 385-394, XP002958898 ISSN: 0002-9440 * abstract *	1-44,54, 55,61-64	

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TECHNICAL FIELDS SEARCHED (IPC)

C12Q
C07K
G01N

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

INCOMPLETE SEARCH

The Search Division considers that the present application, or some or all of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for the following claims:

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

Place of search	Date of completion of the search	Examiner
The Hague	3 March 2006	Kools, P

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disolosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C20)

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A,D	KRIEHUBER ERNST ET AL: "Isolation and characterization of dermal lymphatic and blood endothelial cells reveal stable and functionally specialized cell lineages" JOURNAL OF EXPERIMENTAL MEDICINE, vol. 194, no. 6, 17 September 2001 (2001-09-17), pages 797-808, XP002370480 ISSN: 0022-1007 * abstract *	1-44,54, 55,61-64	
A	CHEN BENJAMIN P C ET AL: "DNA microarray analysis of gene expression in endothelial cells in response to 24-h shear stress" PHYSIOLOGICAL GENOMICS, vol. 7, January 2002 (2002-01), pages 55-63, XP002370481 ISSN: 1094-8341 * the whole document *	1-44,54, 55,61-64	TECHNICAL FIELDS SEARCHED (IPC)
P,D, A	HUARD J ET AL: "Muscle-derived cell-mediated ex vivo gene therapy for urological dysfunction" GENE THERAPY, vol. 9, no. 23, December 2002 (2002-12), pages 1617-1626, XP002370482 ISSN: 0969-7128 * the whole document *	1-44,54, 55,61-64	

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European Patent Office

PARTIAL EUROPEAN SEARCH REPORT

Application Number
EP 03 71 3942

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
D,A	MAKINEN TAIJA ET AL: "Isolated lymphatic endothelial cells transduce growth, survival and migratory signals via the VEGF-C/D receptor VEGFR-3" EMBO (EUROPEAN MOLECULAR BIOLOGY ORGANIZATION) JOURNAL, vol. 20, no. 17, 3 September 2001 (2001-09-03), pages 4762-4773, XP002370483 ISSN: 0261-4189 * the whole document * -----	1-44,54, 55,61-64	
			TECHNICAL FIELDS SEARCHED (IPC)

EPO FORM 1503 03.82 (P04C10)

Claim(s) searched incompletely:
1-7, 10-15, 36, 38

Reason for the limitation of the search:

The present claims 1-7, 10-15, 36, and 38 relate to the use of an extremely large number of possible compounds by referring to a desired feature, i.e. being able to differentially modulate blood or lymphatic endothelial cells. Support and disclosure in the sense of Article 84 and 83 EPC is to be found however for only a very small proportion of the compounds claimed. The non-compliance with the substantive provisions is to such an extent, that a meaningful search of the whole claimed subject-matter of the claim could not be carried out (Rule 45 EPC and Guidelines B-VIII, 3). The extent of the search is consequently limited to the use of properly identified polypeptides and polynucleotides having a Seq ID No as mentioned in claims 8, 17, and 23.

The search of claim 1-7, 10-15, 36, and 38 was restricted to those claimed compounds which appear to be supported and a generalisation of their structural formulae to extracellular fragments, specific binding antibodies, antisense polynucleotides and interferring RNA.

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Application Number
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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

Invention 1, claims 1-44 (partial), 54 and 55 (complete), 61...

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Invention 1, claims 1-44 (partial), 54 and 55 (complete), 61-64 (partial)

Ex vivo method of modulating the growth of endothelial cells comprising contacting endothelial cells with an agent which differentially modulates blood or lymphatic endothelial cells, wherein said agent is the polypeptide with Seq ID No 31 or a fragment thereof, the encoding polynucleotide, an antisense polynucleotide or an interfering RNA specific for said polynucleotide. Composition comprising said agent. Use of said composition for the preparation of a medicament. Use of a lymphatic growth agent selected from VEGF-C or -D polypeptides or polynucleotides for the preparation of a medicament for the treatment of hereditary lymphedema resulting from a mutation in the gene encoding Seq ID No 31. Methods of screening for an endothelial disorder, or monitoring the efficacy of a drug, or identifying modulating compounds, for the gene encoding Seq ID No 31. Expression vector comprising said polynucleotide. A pharmaceutical composition comprising said polypeptide or polynucleotide or vector. Host cell transformed with said vector. Method of producing said polypeptide using said host cell. The purified polypeptide, or an extracellular fragment thereof. A fusion protein comprising the soluble part of Seq ID No 31. A pharmaceutical composition comprising said polypeptide and a kit comprising said pharmaceutical composition. An antibody specific binding said fusion or soluble peptide. Methods of identifying the polynucleotide and polypeptide of the invention. Method of assaying the risk for developing hereditary lymphedema by screening for mutations in the Seq Id No 31 encoding gene of a human. An inhibitor of the protein of the invention, wherein said inhibitor is the soluble fragment, an antibody or an antisense nucleic acid.

Inventions 2, 3, claims 1-44 (partial), 56, 57 (partial), 61-64 (partial)

See invention 1, now for the polypeptides with Seq ID No 32 and 33, and their encoding polynucleotides.

Inventions 4-9, claims 1-41, 43, 44 (partial)

See invention 1, now for Seq ID No 34, 46, 48, 81, 187 and 207, and their encoding polynucleotides.

Inventions 10-15, claims 1-8, 10-22, 26-31 (partial)

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

See invention 1, now for Seq ID No 211, 221, 235, 241, 293 and 391, and their encoding polynucleotides.

Invention 16-18, claims 1-7, 10-15, 23-29, 31-44 (all partial)

As for invention 1, now for Seq ID No 676, 859 and 861, and their encoding polynucleotides.

Invention 19, claims 45-53

Ex vivo method of modulating the growth of endothelial cells comprising the use of prox-1 agents being the prox-1 polypeptide, an encoding polynucleotide or an antisense molecule to said polynucleotide. Composition comprising said prox-1 agents. Methods of preparing LEC cells by transforming endothelial cells derived from a human with the prox-1 polynucleotide.

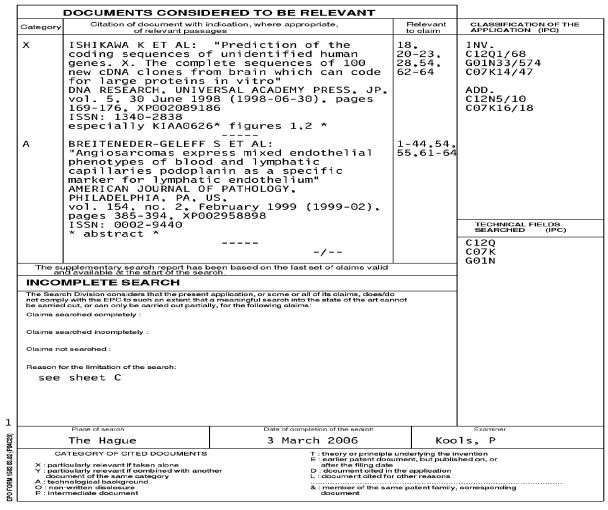
Invention 20, claim 17 (partial), 58-60 (complete), and 61-64 partially

Isolated polypeptide having at least 95% identity to Seq ID No 111, and fusion protein thereof. Polynucleotide encoding said polypeptides, vector comprising said polynucleotide and specific binding antibodies.

专利名称(译)	淋巴和血液内皮细胞基因		
公开(公告)号	EP1487857A4	公开(公告)日	2006-08-09
申请号	EP2003713942	申请日	2003-03-07
[标]申请(专利权)人(译)	路德维格癌症研究所		
申请(专利权)人(译)	路德维希癌症研究所 LICENTIA. , LTD.		
当前申请(专利权)人(译)	路德维希癌症研究所 LICENTIA. , LTD.		
[标]发明人	ALITALO KARI MOLECULAR CANCER BIOLOGY LAB MAKINEN TAIJA DEPT OF MOLECULE NEUROBIOLOGY PETROVA TATIANA MOLECULAR CANCER BIOLOGY LAB SAHARINEN PIPSA MOLECULAR CANCER BIOLOGY LAB SAHARINEN JUHA MOLECULAR CANCER BIOLOGY LAB		
发明人	ALITALO, KARI,MOLECULAR/CANCER BIOLOGY LABORATORY MAKINEN, TAIJA,DEPT. OF MOLECULE NEUROBIOLOGY PETROVA, TATIANA,MOLECULAR/CANCER BIOLOGY LAB. SAHARINEN, PIPSA,MOLECULAR/CANCER BIOLOGY LAB. SAHARINEN, JUHA,MOLECULAR/CANCER BIOLOGY LAB.		
IPC分类号	C12Q1/68 G01N33/50 A61K31/7088 A61K35/76 A61K38/00 A61K39/395 A61K48/00 A61P9/00 A61P35/00 C07K14/47 C07K16/18 C07K16/46 C07K19/00 C12N1/15 C12N1/19 C12N1/21 C12N5/06 C12N5/10 C12N15/09 C12P21/02 C12Q1/02 G01N33/15 G01N33/53 G01N33/574 C07H21/04		
CPC分类号	C07K16/22 A61K38/00 C12Q1/6883 C12Q2600/158 G01N33/574 G01N33/5748 G01N2800/52		
代理机构(译)	TIMOTHY JOHN SIMON，跳		
优先权	60/363019 2002-03-07 US		
其他公开文献	EP1487857A1		
外部链接	Espacenet		

摘要(译)

本发明提供了在淋巴管与血管内皮细胞中差异表达的多核苷酸和基因。这些基因可用于通过淋巴系统治疗涉及淋巴管的疾病，例如淋巴水肿，各种炎性疾病和癌症转移。



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L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)