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**C07K 16/28** <sup>(2006.01)</sup>

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(72) Inventor: **Clementson, Kenneth J.**  
**3065 Bern (CH)**

(62) Document number(s) of the earlier application(s) in  
accordance with Art. 76 EPC:  
**08004264.1 / 1 942 186**  
**00927035.6 / 1 177 289**

(54) **Recombinant platelet collagen receptor glycoprotein VI , antibodies and their pharmaceutical use**

(57) The invention relates to Glycoprotein VI (GPVI), its isolation, purification, and methods for recombinant production. Especially, the invention relates to the use of GPVI, preferably recombinant GPVI, in the treatment of disorders and pathological events correlated directly or indirectly to blood coagulation disorders such as

thrombotic and cardiovascular diseases. The extracellular recombinant protein can also be used for establishing screening assays to find potential inhibitors of the membrane bound GPVI in order to inhibit binding of thrombocytes and platelets, respectively, to collagen.

**EP 2 341 141 A3**



EUROPEAN SEARCH REPORT

Application Number  
EP 11 00 1216

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	ISHIBASHI T ET AL: "Functional significance of platelet membrane glycoprotein p62 (GP VI), a putative collagen receptor.", INTERNATIONAL JOURNAL OF HEMATOLOGY AUG 1995, vol. 62, no. 2, August 1995 (1995-08), pages 107-115, XP008092080, ISSN: 0925-5710	1-4	INV. C12N15/12 C07K14/705 A61K38/17 G01N33/68 C07K16/28
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The present search report has been drawn up for all claims			
Place of search <b>The Hague</b>		Date of completion of the search <b>15 February 2012</b>	Examiner <b>Gurdjian, Didier</b>
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 disclosure 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	

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EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number  
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6	Place of search The Hague	Date of completion of the search 15 February 2012	Examiner Gurdjian, Didier
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EPO FORM 1503\_03\_02 (P/AC01)



EUROPEAN SEARCH REPORT

Application Number  
EP 11 00 1216

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The present search report has been drawn up for all claims			
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
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Application Number

EP 11 00 1216

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

- Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due 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 those claims for which no payment was due.

**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:
- The present supplementary 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 (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
EP 11 00 1216

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:

1. claims: 1-5

Anti-GPVI Fab or F(ab')

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2. claims: 6-10, 12

Monoclonal or polyclonal antibodies recognising the N-terminal region of GPVI or monoclonal antibodies recognising new sites or conformations exposed by proteolysis of the N-terminal domain or specific conformations present either in the intact molecule and not in the aged one or vice versa

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3. claim: 11

Recombinant Glycoprotein VI as medicament

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4. claim: 13

Pharmaceutical composition comprising a pharmacologically active compound

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5. claim: 14

Recombinant GPVI for the use as a medicament in the therapeutical field of thrombotic and cardiovascular events and disorders related to thrombocyte-collagen interactions.

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ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.

EP 11 00 1216

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-02-2012

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专利名称(译)	重组血小板胶原受体糖蛋白VI, 抗体及其药物用途		
公开(公告)号	<a href="#">EP2341141A3</a>	公开(公告)日	2012-03-28
申请号	EP2011001216	申请日	2000-04-25
[标]申请(专利权)人(译)	赛诺菲-安万特德国有限公司		
申请(专利权)人(译)	SANOFI-AVENTIS DEUTSCHLAND GMBH		
当前申请(专利权)人(译)	SANOFI-AVENTIS DEUTSCHLAND GMBH		
[标]发明人	CLEMENTSON KENNETH J		
发明人	CLEMENTSON, KENNETH J.		
IPC分类号	C12N15/12 C07K14/705 A61K38/17 G01N33/68 C07K16/28 G01N33/50 A61K38/00 A61P7/02 A61P9/10 C07K14/755 C12N15/09 G01N15/00 G01N33/15 G01N33/53 G01N33/86		
CPC分类号	A61K38/00 C07K14/70503 C07K14/755 C07K16/2803 C07K2317/54 C07K2317/55 G01N33/86 G01N2015/0084 G01N2333/4728 G01N2333/78 G01N2500/02 G01N2800/222 C07K14/745 C07K16/28 C07K2317/20 C07K2317/76		
优先权	1999109094 1999-05-07 EP		
其他公开文献	EP2341141B1 EP2341141A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

本发明涉及糖蛋白VI ( GPVI ) , 其分离, 纯化和重组生产方法。特别地, 本发明涉及GPVI, 优选重组GPVI在治疗直接或间接与凝血障碍如血栓形成和心血管疾病相关的病症和病理事件中的用途。细胞外重组蛋白也可用于建立筛选试验。寻找膜结合GPVI的潜在抑制剂, 以分别抑制血小板和血小板与胶原蛋白的结合。

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)		
X	Category 1 Creation of document with indication, where appropriate, of relevant passages. ISHIBASHI T ET AL: "Functional significance of platelet membrane glycoprotein p62 (GP-VII), a putative collagen receptor." INTERNATIONAL JOURNAL OF HEMATOLOGY AUG 1995, vol. 62, no. 2, August 1995 (1995-08), pages 107-115, XP068092080, ISSN: 0925-5710 * abstract * * page 112 * * page 108, left-hand column, paragraph 1 *	1-4  5.11.14	INV. C12N15/12 C07K14/705 A61K38/17 G01N33/68 C07K16/28		
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A	CHIANG T M ET AL: "Cloning, characterization, and functional studies of a nonintegrin platelet receptor for Type I collagen." THE JOURNAL OF CLINICAL INVESTIGATION 1 AUG 1997, vol. 100, no. 3, 1 August 1997 (1997-08-01), pages 514-521, XP02481736, ISSN: 0021-9738 * abstract *	1-5 1-5			
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<table border="0"> <tr> <td style="vertical-align: top;"> <p>6</p> <p>DOCUMENT SEARCH</p> <p>0 particularly relevant to claims defining the invention</p> <p>X particularly relevant to claims defining the invention and cited in the application</p> <p>A non-relevant document</p> <p>Y relevant document</p> </td> <td style="vertical-align: top;"> <p>1 theory or principle underlying the invention</p> <p>2 state of the art</p> <p>3 document cited in the application</p> <p>4 document cited for other reasons</p> <p>5 member of the same patent family, corresponding document</p> </td> </tr> </table>				<p>6</p> <p>DOCUMENT SEARCH</p> <p>0 particularly relevant to claims defining the invention</p> <p>X particularly relevant to claims defining the invention and cited in the application</p> <p>A non-relevant document</p> <p>Y relevant document</p>	<p>1 theory or principle underlying the invention</p> <p>2 state of the art</p> <p>3 document cited in the application</p> <p>4 document cited for other reasons</p> <p>5 member of the same patent family, corresponding document</p>
<p>6</p> <p>DOCUMENT SEARCH</p> <p>0 particularly relevant to claims defining the invention</p> <p>X particularly relevant to claims defining the invention and cited in the application</p> <p>A non-relevant document</p> <p>Y relevant document</p>	<p>1 theory or principle underlying the invention</p> <p>2 state of the art</p> <p>3 document cited in the application</p> <p>4 document cited for other reasons</p> <p>5 member of the same patent family, corresponding document</p>				