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**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

**Published:**

— with international search report (Art. 21(3))  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))  
— with sequence listing part of description (Rule 5.2(a))

(88) Date of publication of the international search report:  
26 May 2011



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(54) Title: COMPOSITIONS AND METHODS FOR ANTIBODIES TARGETING COMPLEMENT PROTEIN C3B

(57) Abstract: The present invention relates to antibodies and antigen binding fragments thereof that bind to both human and cynomolgus complement protein C3b, as well as compositions and methods of use thereof.

INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2010/056129

A. CLASSIFICATION OF SUBJECT MATTER  
INV. C07K16/18 A61K39/395 A61P27/02  
ADD.  
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED  
Minimum documentation searched (classification system followed by classification symbols)  
C07K  
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)  
EPO-Internal, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2008/118711 A2 (NOVELMED THERAPEUTICS INC [US]; BANSAL REKHA [US]) 2 October 2008 (2008-10-02) paragraphs [0002], [0010], [0029] - [0045], [0127] - [0131], [0141]; claims 1-36; figures 3,5; examples 1-13 -----	1-38
A	WO 2008/154251 A2 (GENENTECH INC [US]; VAN LOOKEREN CAMPAGNE MENNO [US]) 18 December 2008 (2008-12-18) the whole document, especially examples 3-10 ----- -/--	1-38

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search  23 March 2011	Date of mailing of the international search report  04/04/2011
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Bayer, Annette
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2010/056129

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	TOSIC L ET AL: "Preparation of monoclonal antibodies to C3b by immunization with C3b(i)-Sephrose", JOURNAL OF IMMUNOLOGICAL METHODS, ELSEVIER SCIENCE PUBLISHERS B.V.,AMSTERDAM, NL, vol. 120, no. 2, 21 June 1989 (1989-06-21), pages 241-249, XP023975210, ISSN: 0022-1759, DOI: DOI:10.1016/0022-1759(89)90248-2 [retrieved on 1989-06-21] the whole document -----	1-34
A	WARK K L ET AL: "Latest technologies for the enhancement of antibody affinity", ADVANCED DRUG DELIVERY REVIEWS, ELSEVIER BV, AMSTERDAM, NL, vol. 58, no. 5-6, 7 August 2006 (2006-08-07), pages 657-670, XP024892147, ISSN: 0169-409X, DOI: DOI:10.1016/J.ADDR.2006.01.025 [retrieved on 2006-08-07] the whole document, especially table 2 -----	1-34
A	WO 2007/042309 A2 (MORPHOSYS AG [DE]; TESAR MICHAEL [DE]) 19 April 2007 (2007-04-19) sequence 19 -----	22,25, 29,31-34
A	WO 2006/059108 A2 (DOMANTIS LTD [GB]; ARGENTA DISCOVERY LTD [GB]; DE WILDT RUUD M [GB]; D) 8 June 2006 (2006-06-08) sequence 31 -----	23,24, 26,27, 30-34

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2010/056129

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:  
  
1-38(partially)
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2010/056129

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008118711 A2	02-10-2008	AU 2008231092 A1	02-10-2008
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		US 2009191217 A1	30-07-2009
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**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-17, 28, 32-38(all partially)

An isolated antibody or antigen binding fragment thereof that specifically binds to a human complement C3b protein, wherein said antibody binds to human C3b with a KD of less than or equal to 100 pM and related subject-matter.

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2. claims: 1, 8-17, 28, 32-35, 37(all partially)

An isolated antibody or antigen binding fragment thereof that specifically binds to a cynomolgus complement C3b protein and related subject-matter.

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3. claims: 1-38(partially)

An isolated antibody or antigen binding fragment thereof that specifically binds to a human and cynomolgus complement C3b protein, wherein said antibody binds to human C3b with a KD of less than or equal to 100 pM and wherein said antibody comprises structural features from the antibodies designated MOR09556, MOR09124, MOR09611, MOR09397, MOR09612 and MOR09398 as defined in Table 1 and related subject-matter.

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4. claims: 1-38(partially)

An isolated antibody or antigen binding fragment thereof that specifically binds to a human and cynomolgus complement C3b protein, wherein said antibody binds to human C3b with a KD of less than or equal to 100 pM and wherein said antibody comprises structural features from the antibodies designated MOR09609, MOR09136, MOR09610 and MOR09141 as defined in Table 1 and related subject-matter.

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5. claims: 1-38(partially)

An isolated antibody or antigen binding fragment thereof that specifically binds to a human and cynomolgus complement C3b protein, wherein said antibody binds to human C3b with a KD of less than or equal to 100 pM and wherein said antibody comprises structural features from the antibodies designated MOR09674 and MOR09373 as defined in Table 1 and related subject-matter.

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6. claims: 1-38(partially)

An isolated antibody or antigen binding fragment thereof that specifically binds to a human and cynomolgus complement

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

C3b protein, wherein said antibody binds to human C3b with a KD of less than or equal to 100 pM and wherein said antibody comprises structural features from the antibodies designated MOR09675 and MOR09423 as defined in Table 1 and related subject-matter.

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