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Published:

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MODIFIED INTERFERON-GAMMA POLYPEPTIDES AND METHODS FOR USING MODIFIED INTERFERON-GAMMA POLYPEPTIDES

(57) Abstract: A modified interferon- γ polypeptide, comprising one or more amino acid replacements in an unmodified IFN- γ polypeptide at positions corresponding to any of amino acid positions 2, 5-12, 14-18, 24, 28-29, 31, 32, 35, 36, 39, 44, 45, 48, 51, 53-55, 57, 59, 60, 62, 63, 71-80, 83, 84, 89-99, 100, 101, 105, 106, 109, 115, 117, 122, 123, 125, 128, 131-134, 137-139, 142, 143 of a mature interferon- γ . The modification results in an increased stability of the protein. The modified interferon- γ polypeptide is used for the treatment of a disease or condition selected from among a viral infection, a bacterial infection, a fungal infection, a protozoa infection, a cancer, idiopathic pulmonary fibrosis, a fibrotic condition, a hyper-IgE condition, malignant osteopetrosis and chronic granulomatous.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER INV. C07K14/57 A61K38/21 A61P31/04 A61P31/12 A61P33/02 A61P35/00 A61P11/00		
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 A61K		
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, BIOSIS, Sequence Search, EMBASE, WPI Data, 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.
A	WO 2004/022593 A2 (NAUTILUS BIOTECH [FR]; GANTIER RENE [FR]; GUYON THIERRY [FR]; VEGA MAN) 18 March 2004 (2004-03-18) cited in the application abstract page 96, lines 7-13 figure 12b sequences 290-311 claims 1,3,24,82-84	1-120
A	----- KONTSEK PETER ET AL: "Engineered acid-stabile human interferon gamma" CYTOKINE, vol. 12, no. 6, June 2000 (2000-06), pages 708-710, XP002413237 ISSN: 1043-4666 abstract figure 2 ----- -/-	1-120
☒ 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. *G* document member of the same patent family		
Date of the actual completion of the international search	Date of mailing of the international search report	
4 January 2007	13/04/2007	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Montrone, Marco	

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International application No
PCT/IB2006/002034

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 195 35 853 A1 (FRAUNHOFER GES FORSCHUNG [DE]) 20 March 1997 (1997-03-20) abstract -----	1-120
A	ALTOBELLI GIOIA ET AL: "Role of the C-terminal chain in human interferongamma stability: An electrostatic study" PROTEINS, vol. 43, no. 2, 1 May 2001 (2001-05-01), pages 125-133, XP002413238 ISSN: 0887-3585 abstract page 129, column 2, paragraphs 2,3 -----	1-120

INTERNATIONAL SEARCH REPORT

International application No.
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Box 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:

Although claims 110-117 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound.
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 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 fee, this Authority did not invite payment of any additional fee.
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.:
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.:

1-120 (all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

Invention 1: claims 1-120(all partially)

A modified interferon-gamma (IFN-g) polypeptide comprising one or more amino acid replacements in an unmodified IFN-g polypeptide at positions corresponding to amino acid position number 2.

Invention 2-79: claims 1-120(all partially)

A modified interferon-gamma (IFN-g) polypeptide comprising one or more amino acid replacements in an unmodified IFN-g polypeptide at positions corresponding to any of amino acid positions 5-12, 14-18, 24, 28, 29, 31, 32, 35, 36, 39, 44, 45, 48, 51, 53-55, 57, 59, 60, 62, 63, 71-80, 83, 84, 89-101, 105, 106, 109, 115, 117, 122, 123, 125, 128, 131-134, 137-139, 142 and 143 and the specific combination of claim 2.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2006/002034

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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