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(54) **Dual specificity antibodies and methods of making and using**

(57) Antibodies having dual specificity for two different but structurally related antigens are provided. The antibodies can be, for example, entirely human antibodies, recombinant antibodies, or monoclonal antibodies. Preferred antibodies have dual specificity for IL-1 alpha and IL-1 beta and neutralize IL-1 alpha and IL-1 beta activity in vitro and in vivo. The antibody can be a full-length antibody or an antigen-binding portion thereof.

Methods of making and methods of using the antibodies are also provided. The antibodies, or antibody portions, are useful for detecting two different but structurally related antigens (e.g., IL-1 alpha and IL-1 beta) and for inhibiting the activity of the antigens, (e.g., in a human subject suffering from a disorder in which IL-1 alpha and/or IL-1 beta activity is detrimental.

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EUROPEAN SEARCH REPORT

Application Number
EP 10 18 2393

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	LUGER T A ET AL: "MONOCLONAL ANTI-INTERLEUKIN 1 IS DIRECTED AGAINST A COMMON SITE OF HUMAN INTERLEUKIN 1-ALPHA AND INTERLEUKIN 1-BETA", IMMUNOBIOLOGY, vol. 172, no. 3-5, 1986, pages 346-356, XP008004584, ISSN: 0171-2985	1-3,7-15	INV. C07K16/24 C07K16/46
Y	* abstract * * page 347, lines 26-29; figures 3,5; table 2 * * page 349, lines 4-12 * * page 351, lines 9-11 * * page 352, lines 9-13 * * page 354, lines 2-10 *	4-6	ADD. C07K14/545 A01K67/027 A61K47/48 G01N33/68
Y	VAN DE LOO F A ET AL: "Modulation of cartilage destruction in murine arthritis with anti-IL-1 antibodies.", AGENTS AND ACTIONS 1993, vol. 39 Spec No, 1993, pages C211-C214, XP002515149, ISSN: 0065-4299 * the whole document *	4-6	TECHNICAL FIELDS SEARCHED (IPC) C07K
The present search report has been drawn up for all claims			
1	Place of search The Hague	Date of completion of the search 21 October 2011	Examiner Luyten, Kattie
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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Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	<p>GEIGER T ET AL: "NEUTRALIZATION OF INTERLEUKIN-1 BETA ACTIVITY IN VIVO WITH A MONOCLONAL ANTIBODY ALLEVIATES COLLAGEN-INDUCED ARTHRITIS IN DBA/1 MICE AND PREVENTS THE ASSOCIATED ACUTE-PHASE RESPONSE", CLINICAL AND EXPERIMENTAL RHEUMATOLOGY, PACINI, PISA, IT, vol. 11, no. 5, 1 September 1993 (1993-09-01), pages 515-522, XP009081237, ISSN: 0392-856X * whole document, especially the abstract and Figure 3 *</p> <p style="text-align: center;">-----</p>	4-6	
Y	<p>DINANT ET AL: "New therapeutic targets for rheumatoid arthritis.", PHARMACY WORLD & SCIENCE, vol. 21, no. 2, 1 April 1999 (1999-04-01), pages 49-59, XP55009811, ISSN: 0928-1231 * page 52, lines 5-7; table 2 *</p> <p style="text-align: center;">-----</p>	4-6	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
Place of search		Date of completion of the search	Examiner
The Hague		21 October 2011	Luyten, Kattie
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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专利名称(译)	双特异性抗体及其制备和使用方法		
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CPC分类号	A61K47/6845 A61K2039/505 A61P1/04 A61P17/06 A61P25/00 A61P29/00 C07K14/545 C07K16/245 C07K16/46 C07K16/468 C07K2317/31 C07K2317/33 C07K2317/34 G01N33/6869 C07K2317/10 C07K2317/56 C07K2317/76		
优先权	60/215379 2000-06-29 US		
其他公开文献	EP2386575A2		
外部链接	Espacenet		

摘要(译)

提供了对两种不同但结构相关的抗原具有双重特异性的抗体。抗体可以是例如完全人抗体，重组抗体或单克隆抗体。优选的抗体对IL-1 α 和IL-1 β 具有双重特异性，并在体外和体内中和IL-1 α 和IL-1 β 活性。抗体可以是全长抗体或其抗原结合部分。还提供了制备和使用所述抗体的方法。抗体或抗体部分可用于检测两种不同但结构上相关的抗原（例如IL-1 α 和IL-1 β ）和用于抑制抗原的活性（例如，在患有病症的人类受试者中其中IL-1 α 和/或IL-1 β 活性是有害的。

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REASON FOR CITATION OF THE DOCUMENT 1 cited as prior art 2 cited as being close to the invention 3 cited in the application 4 document cited for other reasons 5 prior art of the same patent family, corresponding document				