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(54) Title: METHODS FOR THE TREATMENT OF MULTIPLE MYELOMA

(57) Abstract: Methods for treating multiple myeloma with inhibitors of CXCR4 are described. The decreased expression of CXCR4 on multiple myeloma cells according to the invention results in decreased homing of the cells to the bone marrow and a reduction in the development of the disease. Also disclosed are pharmaceutical compositions incorporating such inhibitors for use in the therapeutic treatment of multiple myeloma. The treatment methods described herein can be used independently, or in conjunction with, other therapies for the treatment of multiple myeloma.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/15244

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61K 38/16(2006.01);C07D 471/04(2006.01);C07K 14/725(2006.01)

USPC: 514/12;530/324;546/138

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)

U.S. : 514/12; 530/324; 546/138

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 practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	BURGER, et al. Chronic Lymphocytic Leukemia B Cells Express Functional CXCR4 Chemokine Receptors That Mediate Spontaneous Migration Beneath Bopne Marrow Stromal Cells. Blood. 01 December 1999, Vol. 94, No. 11, pages 3658-3667, see page 3661, col. 1, paragraph 1 (figure 4); page 3662, col. 2, paragraph 2 - page 3663, col. 1, paragraph 2 (figure 6).	1-5, 7, 8, 10, 11, 14, 15, 17 ----- 6, 9, 12, 13, 16
X	SHEN et al. The chemokine receptor CXCR4 enhances integrin-mediated in vitro adhesion and facilitates engraftment of leukemic precursor-B cells in the bon marrow. Experimental Hematology. 2001, Vol. 2, pages 1439-1447, see page 1439, col. 2, paragraph 1 - page 1440, col. 1, paragraph 1; page 1441, col. 1, paragraph 3 (figure 1D); page 1442, col. 1, paragraph 2 - col. 2, paragraph 1 (figure 4).	1-5, 7, 8, 10, 11, 14, 15, 17 ----- 6, 9, 12, 13, 16

☒ 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

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"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

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Date of the actual completion of the international search

18 October 2006 (18.10.2006)

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International application No.
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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GUPTA et al. Pharmacological evidence for complex and multiple site interaction of CXCR4 with SDF-1alpha: implications for development of selective CXCR4 antagonists. Immunology Letters. 2001, Vol. 78, pages 29-34, see page 30, col. 1, paragraph 1; page 32, col. 1, paragraph 2 - page 33, col. 1, paragraph 1 (figure 2).	6
Y,P	US 2005/0277670 A1 (ZHOU et al.) 15 December 2005 (15.12.2005), entire document.	6, 12, 13, 16
Y	DOENCH et al. siRNAs can function as miRNAs. Genes & Development. 2003, Vol. 17, pages 438-442, see figure 1.	9

INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

Search performed in databases: PubMed, STN, (caplus, bioeng, biotechno, biotechds esbiobase), DIALOG (155, 159, 10, 203, 35, 4, 467, 73, 434, 34) and WEST

Search terms: CXCR4 receptor and inhibitor and hematological malignancy or tumor or cancer and antibody and siRNA and multiple myeloma.