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(54) Title: COMPOSITIONS AND METHODS FOR INHIBITION OF OR TREATMENT OF DENGUE VIRUS INFECTION

(57) Abstract: The present invention relates to a method of interfering with dengue infection comprising interfering with dengue virus binding to a syndecan present on a cell targeted by dengue virus. The present invention further relates to treating a patient for dengue virus infection comprising administering to a patient, either having a dengue infection or a patient exposed to dengue infection, an effective amount of an agent that interferes with dengue virus binding to a syndecan on a surface of a cell targeted by dengue virus. The present invention further relates to a pharmaceutical composition comprising a pharmaceutically acceptable carrier, and an effective amount of an agent that interferes with dengue virus binding to a syndecan on a surface of a cell targeted by dengue virus.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - C12N 15/11; C07H 21/04 (2011.01) USPC - 514/44A; 536/24.5 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) IPC(8) - C12N 15/11; C07H 21/04 (2011.01) USPC - 514/44A; 536/24.5		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 514/44R (Text Search)		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST (PGPB, USPT, USOC, EPAB, JPAB); PubMed and Google Scholar: dengue, virus, syndecan, bind, bind\$, HCV, Flavivird\$, hepatitis C, SYND, SYND1, SYND2, SYND3, SYND4, CD138, Amphiglycan, ryudocan, HSPG, CD362, HSPG1, heparan sulfate proteoglycan fibroblast growth factor receptor, fibroglycan		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CHESHENKO, et al. Multiple Receptor Interactions Trigger Release of Membrane and Intracellular Calcium Stores Critical for Herpes Simplex Virus Entry. <i>Molecular Biology of the Cell</i> 2007,18:3119-3130; fig 2; abstract	1-52
Y	HILGARD, et al. Heparan Sulfate Proteoglycans Initiate Dengue Virus Infection of Hepatocytes. <i>HEPATOLOGY</i> 2000, 32:1069-1077; abstract; pg 1069, col 2, para 2; pg 1076, col 1, para 2	1-52
Y	JONES, et al. Heparan Sulfate Proteoglycans Mediate Attachment and Entry of Human T-Cell Leukemia Virus Type 1 Virions into CD4+ T Cells. <i>JOURNAL OF VIROLOGY</i> 2005, 79(20):12692-12702; fig 8; pg 12698, col 1, para 2 to col 2, para 1; pg 12700, col 1, para 3 to col 2, para 2	1-52
Y	US 2002/0048585 A1 (GOETINCK) 25 April 2002 (25.04.2002) para [0019], [0020], [0033], [0034], [0040], [0041], [0120]-[0123], [0137]	2-4, 10, 15-17, 23, 25-26, 28-30, 36, 38-39 and 43-52
Y	US 6,566,074 B1 (GOETINCK) 20 May 2003 (20.05.2003) col 2, ln 24-61	8-9, 21-22, 34-35 and 50-51
A	LIN, et al. Heparin inhibits dengue-2 virus infection of five human liver cell lines. <i>Antiviral Res.</i> October 2002, Vol 56(1), pages 93-96; abstract	5
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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.
A	LUNG, et al. The study of syndecan-1 molecule expression on a human endothelial cell line: Effects between the pro-inflammatory cytokine and the virus. FASEB Journal 2000, 14(6):A1110, No. 139.6	11
A	LIU, et al. Cell Surface Heparan Sulfate and Its Roles in Assisting Viral Infections. Medicinal Research Reviews 2002, 22(1):1-25	1-52
A	YAMADA, et al. Potential Therapeutic Application of Chondroitin Sulfate/Dermatan Sulfate. Current Drug Discovery Technologies 2008, 5:289-301	1-52