

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 May 2003 (08.05.2003)

PCT

(10) International Publication Number
WO 03/038037 A3

(51) International Patent Classification⁷: **A61K 39/38**,
A01N 43/04, C12Q 1/68

(21) International Application Number: PCT/US02/33909

(22) International Filing Date: 23 October 2002 (23.10.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/350,160 29 October 2001 (29.10.2001) US
60/337,905 13 November 2001 (13.11.2001) US

(71) Applicant: **CARITAS ST. ELIZABETH'S MEDICAL CENTER OF BOSTON, INC.** [US/US]; 736 Cambridge Street, Boston, MA 02135 (US).

(72) Inventor: **WALSH, Kenneth**; 207 Judy Farm Road, Carlisle, MA 01741 (US).

(74) Agent: **STEELE, Alan, W.**; Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
11 December 2003

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.



WO 03/038037 A3

(54) Title: GLYCOGEN SYNTHASE KINASE FUNCTION IN ENDOTHELIAL CELLS

(57) Abstract: This invention relates to methods and compositions for modulating endothelial cell viability, endothelial cell migration, and angiogenesis. In particular the invention relates to GSK3 molecules, agents that modify the kinase activity of these molecules, and use of the foregoing in modulating the endothelial cell viability, endothelial cell migration, and angiogenesis.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/33909

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61 K 39/38; A01N 43/04; C12Q 1/68
 US CL : 424/184.1; 514/44; 435/6

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. : 424/184.1; 514.44; 435/6

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)
 EMBASE, BIOSIS, SCISEARCH, CAPLUS, MEDLINE on STN

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	KIM, H. Regulation of Angiogenesis by Glycogen Synthase Kinase-3beta. J Biol. Chem. 1 November 2002, Vol. 277, No. 44, see entire document, abstract in particular.	1-39
Y	DING, V.W. Differential Regulation of Glycogen Synthase Kinase 3beta by Insulin and Wnt Signaling. J. Biol. Chem. October 2000, Vol. 275, No. 42, pages 32475-32481, especially page 32476.	40-54 and 57-67
Y	HETMAN, M. Role of Glycogen Synthase Kinase-3beta in Neuronal Apoptosis Induced by Trophic Withdrawal. J. of Neuroscience. 1 April 2000, Vol. 20, No. 7, pages 2567-2574, especially page 2572.	40-54 and 60-67
Y	XAVIER, I. J. Glycogen Synthase Kinase 3beta Negatively Regulates Both DNA-binding and Transcriptional Activities of Heat Shock Factor 1. J. Biol. Chem. 15 September 2000, Vol. 275, No. 37, pages 29147-29152, especially page 29149.	55-59
Y	KUREISHI, Y. The HMG-CoA Reductase Inhibitor Simvastatin Activates the Protein Kinase Akt and Promotes Angiogenesis in Normocholesterolemic animals. Nature Medicine. September 2000, Vol. 6, No. 8, pages 1004-1010, especially page 1005.	55-59

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"
"A" document defining the general state of the art which is not considered to be of particular relevance	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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

15 September 2003 (15.09.2003)

Date of mailing of the international search report

17 OCT 2003

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Phuong Huynh
 Phuong Huynh

Telephone No. (703) 308-0196