

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
21 December 2007 (21.12.2007)

PCT

(10) International Publication Number  
**WO 2007/145672 A3**

(51) International Patent Classification:  
A61K 38/40 (2006.01) A61K 38/54 (2006.01)  
A61K 38/17 (2006.01)

(21) International Application Number:  
PCT/US2006/060956

(22) International Filing Date:  
16 November 2006 (16.11.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/804,060 6 June 2006 (06.06.2006) US  
11/160,167 15 November 2006 (15.11.2006) US

(71) Applicant (for all designated States except US): **Zoltan Laboratories LLC** [US/US]; 404 20th Street SW, Austin, MN 55912 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **KISS, Zoltan** [HU/US]; 404 20th Street SW, Austin, MN 55912 (US).

(74) Agents: **D'SOUZA, Tanya** et al.; 90 South Seventh Street, 2200 Wells Fargo Center, Minneapolis, MN 55402-3901 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:  
— with international search report

(88) Date of publication of the international search report:  
3 April 2008



**WO 2007/145672 A3**

(54) Title: COMBINATIONS OF HUMAN PROTEINS TO ENHANCE VIABILITY OF STEM CELLS AND PROGENITOR CELLS

(57) Abstract: Embodiments of the present invention include the use of placental alkaline phosphatase and other members of the alkaline phosphatase family alone or in combination with human transferrin and, optionally, human  $\alpha_1$ -antitrypsin to enhance the proliferation and survival of adult or embryonic stem cells and stem cell-derived progenitor cells *in vitro* and *in vivo*.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/60956

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC: **A61K 38/40( 2006.01),38/17( 2006.01),38/54( 2006.01)**  
  
 USPC: 424/94.1  
 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. : 424/94.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 Pubmed

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 EAST, STN Easy (placental alkaline phosphatase, transferrin, antitrypsin, stem cells)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/0048046 A1 (KISS) 03 March 2005 (03.03.2005) see abstract, claim 1.	1-9 and 12-26
Y	US 5,405,772 A (PONTING) 11 April 1995 (11.04.1995) see abstract, claim 1.	1-9 and 12-26
Y	QING-BAI SHE et al. Alpha-1-antitrypsin can increase insulin-induced mitogenesis in various fibroblast and epithelial cell lines. FEBS Letters 473 (2000) 33-36, see introduction.	1-9, 12-21 and 25-26

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
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"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 01 August 2007 (01.08.2007)	Date of mailing of the international search report <b>19 DEC 2007</b>
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. (571) 273-3201	Authorized officer <i>Maurice Audet</i> Telephone No. 571-272-1600