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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/009819 A3

(51) International Patent Classification[7]: C12N 15/62, 15/67, 15/81, C07K 14/765, 14/79

(21) International Application Number: PCT/GB2003/003273

(22) International Filing Date: 23 July 2003 (23.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0217033.0 23 July 2002 (23.07.2002) GB

(71) Applicant *(for all designated States except US)*: **DELTA BIOTECHNOLOGY LIMITED** [GB/GB]; Castle Court, 59 Castle Boulevard, Nottingham NG7 1FD (GB).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **SLEEP, Darrell** [GB/GB]; 66 Ladybay Road, West Bridgford, Nottingham NG2 5DS (GB).

(74) Agent: **BASSETT, Richard**; Eric Potter Clarkson, Park View House, 58 The Ropewalk, Nottingham NG1 5DD (GB).

(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, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, 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, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, 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:
25 March 2004

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.

(54) Title: POLYPEPTIDES WITH A SIGNAL SEQUENCE COMPRISING AN FIVSI MOTIF AND OLYNUCLEOTIDES ENCODING THEREFOR

Pre	Pro																				
		----------pre-albumin----------||----------pro region--------																			
HSA	HSA	Met	Lys	Trp	Val	Thr	Phe	Ile	Ser	Leu	Leu	Phe	Leu	Phe	Ser	Ser	Ala	Tyr	Ser	Arg	Gly	Val	Phe	Arg	Arg
HSA	MFα-1	Met	Lys	Trp	Val	Thr	Phe	Ile	Ser	Leu	Leu	Phe	Leu	Phe	Ser	Ser	Ala	Tyr	Ser	Arg	Ser	Leu	Asp	Lys	Arg
		-24	-23	-22	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1
Preferred mutations of the invention:							Phe	Ile	Val		Ile														

(57) Abstract: The present invention provides a polypeptide comprising (i) a leader sequence, the leader sequence comprising a (a) secretion pre sequence, and (b) the following motif: $-X_1-X_2-X_3-X_4-X_5-$ where X_1 is phenylalanine, tryptophan, or tyrosine, X_2 is isoleucine, leucine, valine, alanine or methionine, X_3 is leucine, valine, alanine or methionine, X_4 is serine or threonine and X_5 is isoleucine, valine, alanine or methionine; and (ii) a desired protein heterologous to the leader sequence. A polypeptide of the invention may additionally comprise, as part of the leader sequence, a secretion pro sequence. The invention also provides a polynucleotide comprising a sequence that encodes a polypeptide of the invention and a cell, preferably a yeast cell, comprising said polynucleotide.

WO 2004/009819 A3