(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 24 July 2003 (24.07.2003)

PCT

(10) International Publication Number WO 03/060099 A3

(51) International Patent Classification⁷: C07K 14/00

(21) International Application Number: PCT/US03/00814

(22) International Filing Date: 13 January 2003 (13.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/347,510 11 January 2002 (11.01.2002) US 60/408,530 4 September 2002 (04.09.2002) US

(71) Applicant (for all designated States except US): NEXIA BIOTECHNOLOGIES, INC. [CA/CA]; 1000, avenue Saint-Charles, Bloc B, Vaudreuil-Dorion, Quebec J7V 8P5 (CA).

- (71) Applicant and
- (72) Inventor: ALWATTARI, Ali [US/CA]; 18 Lakeshore #512, Point Claire, Quebec H9S 5X9 (CA).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): KARATZAS, Costas, N. [GR/CA]; 251 Sherwood Road, Beaconsfield, Quebec H9W 2H4 (CA). ISLAM, Shafiul [CA/CA]; 430 Tupper Street, Hawkesbury, Ontario K6A 3M5 (CA). RODENHISER, Andrew [CA/CA]; 15-6655, rue de Terrebonne, Montreal, Quebec H4B 1B7 (CA).

- (74) Agents: GEORGE, Nikolaos, C. et al.; Pennie & Edmonds LLP, 1155 Avenue of the Americas, New York, NY 10036 (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, SC, SD, SE, SG, SK, SL, 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, 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:

6 November 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.



∀ 660090/9

(54) Title: METHODS AND APPARATUS FOR SPINNING SPIDER SILK PROTEIN

(57) Abstract: The invention features methods and apparatuses for spinning silk protein fibers (biofilaments) from recombinant biofilament proteins. The methods are particularly useful for spinning fibers of spider silk or silkworm silk proteins from recombinant mammalian cells and may be used to spin such fibers for use in the manufacture of industrial and commercial products.