

(19) World Intellectual Property
Organization
International Bureau



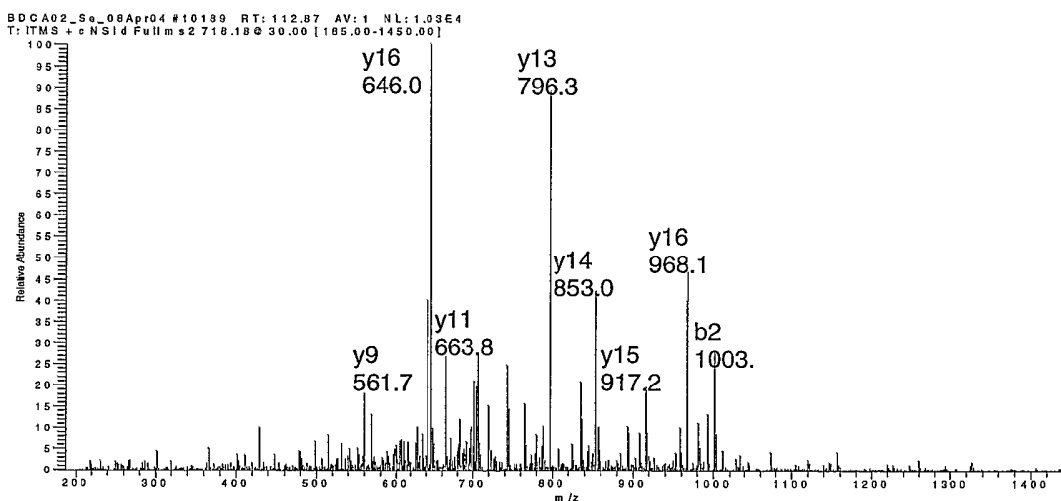
(43) International Publication Date
17 November 2005 (17.11.2005)

PCT

(10) International Publication Number
WO 2005/107491 A3

- (51) International Patent Classification⁷: **C07K 1/22**, 17/08, 17/14, G01N 33/53
- (21) International Application Number: PCT/US2005/015919
- (22) International Filing Date: 5 May 2005 (05.05.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/568,466 5 May 2004 (05.05.2004) US
- (71) Applicant (for all designated States except US): **NORTH-EASTERN UNIVERSITY** [US/US]; 960 Renaissance Park, Boston, MA 02115-5000 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **HANCOCK, William, S.** [US/US]; 39 Chatham Street, Brookline, MA 02446 (US). **YANG, Ziping** [CN/US]; 598 Cambridge Street, Apt. 1, Allston, MA 02134 (US). **HINCAPIE, Marina** [US/US]; 23 Driscoll Drive, Framingham, MA 01701 (US).
- (74) Agents: **KERNER, Ann-Louise** et al.; Wilmer Cutler Pickering, Hale and Dorr LLP, 60 State Street, Boston, MA 02109 (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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, 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
 - 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: 22 December 2005
- 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: MULTI-LECTIN AFFINITY CHROMATOGRAPHY AND USES THEREOF



(57) Abstract: Methods, compositions, and kits related to the use of multi-ligand affinity chromatography are described. The methods include those related to identification of glycoprotein panels for analyzing and diagnosing disease.

WO 2005/107491 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/15919

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07K 1/22, 17/08, 17/14; G01N 33/53
 US CL : 530/412, 413, 417, 350; 435/7.1

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. : 530/412, 413, 417, 350; 435/7.1

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)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FREIER, T., et al. Affinity Chromatography on Immobilized Hog Gastric Mucin and Ovomuroid: A General Method for Isolation of Lectins. Biol. Chem. Hoppe-Seyler. November 1985, Vol. 366, No. 11, pages 1023-1028.	1-3, 6, 8, 10, 12
X	SELA, B.A., et al. Isolation of Lectins of Different Specificities on a Single Affinity Adsorbent. J. Biol. Chem. September 1975, Vol. 250. No. 18, pages 7535-7538.	1-8, 12
T	YANG, Z., et al. Approach to the Comprehensive Analysis of Glycoproteins isolated from Human Serum using a Multi-lectin Affinity Column. J. of Chromatography A. 2004, Vol. 1053, pages 79-88.	1-52
A	GELTOSKY, J.E., et al. Use of Common Plant Lectins for Isolation and Characterization of Constitutive and Developmentally Regulated Cell Surface Associated Glycoproteins of Dictyostelium discoideum. Cell Surface Carbohydrates and Biol. Recog. January 1978, Vol. 23, pages 613-619.	1-52
A	LOTAN, R., et al. Activities of Lectins and Their Immobilized Derivatives in Detergent Solutions: Implications on the Use of Lectin Affinity Chromatography for the Purification of Membrane Glycoproteins. Biochemistry. May 1977, Vol. 16, No. 9, pages 1787-1794.	1-52

Further documents are listed in the continuation of Box C. See patent family annex.

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

11 October 2005 (11.10.2005)

Date of mailing of the international search report

10 NOV 2005

Name and mailing address of the ISA/US

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

Facsimile No. (703) 305-3230

Authorized officer

Marsha Tsay *J. Roberts for*
 Telephone No. 571-272-1600

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/15919

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	COOK, G.M.W., et al. Lectin-Mediated Isolation of Cell Surface Glycoproteins. Methods in Enzymology. January 1990, Vol. 184, pages 304-314.	1-52
A	HAYUNGA, E.G., et al. Characterization of Surface Glycoproteins on Schistosoma Mansoni Adult Worms by Lectin Affinity Chromatography. J. Parasit. April 1986, Vol. 72, No. 2, pages 283-291.	1-52

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/15919

Continuation of B. FIELDS SEARCHED Item 3:
EAST, Hige Wire Press, DIALOG
lectin and chromatography
lectin near (affinity ad, chromatography) and (solid adj support)