

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 February 2007 (08.02.2007)

PCT

(10) International Publication Number
WO 2007/015697 A3

- (51) International Patent Classification:
B01D 57/02 (2006.01)
- (21) International Application Number:
PCT/US2005/029107
- (22) International Filing Date: 16 August 2005 (16.08.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/601,791 16 August 2004 (16.08.2004) US
- (71) Applicant (for all designated States except US): **INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY CORPORATION** [US/US]; 351 West 10th Street, Indianapolis, IN 46202 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BAI, Fengju** [CN/US]; 8665 Algeciras Dr., Apt. 1c, Indianapolis, IN 46250 (US). **LIU, Sheng** [CN/US]; 8665 Algeciras Dr., Apt. 1c, Indianapolis, IN 46250 (US). **WITZMANN, Frank, A.** [US/US]; 2603 Waldon Drive, Greenwood, IN 46143 (US).
- (74) Agent: **ADDISON, Bradford, G.**; Barnes & Thornburg LLP, 11 South Meridian Street, Indianapolis, IN 46204 (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, NG, 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, 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).

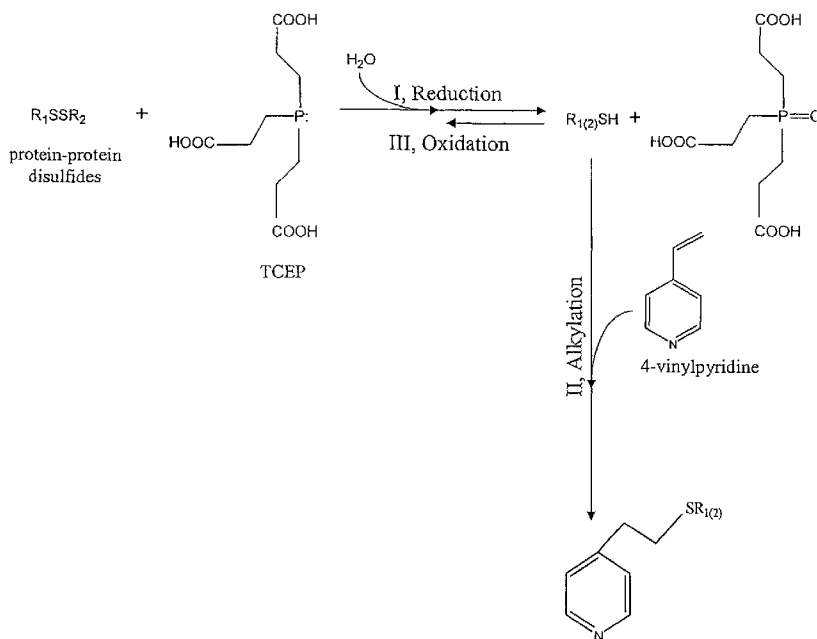
Published:

- with international search report
- 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:
21 June 2007

[Continued on next page]

(54) Title: METHOD FOR ENHANCING TWO-DIMENSIONAL GEL ELECTROPHORESIS RESOLUTION



(57) Abstract: One aspect of the present disclosure is directed to compositions and methods to decrease streaking on two-dimensional gels and enhance the resolution of proteins in the gel. In accordance with one embodiment the polypeptides are contacted with a trialkylphosphine to reduce the polypeptides, followed by alkylation with a compound that provides greater than 95% alkylation of the polypeptides. The resulting alkylated polypeptides are then subjected to two-dimensional gel analysis.

WO 2007/015697 A3



(15) **Information about Correction:**
Previous Correction:
see PCT Gazette No. 16/2007 of 19 April 2007

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/29107

A. CLASSIFICATION OF SUBJECT MATTER USPC - 204/456, 606 IPC(8) - B01D 57/02 (2007.01) 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) USPC - 204/456, 606 IPC(8) - B01D 57/02 (2007.01)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 204/456, 606, 459, 468, 469, 548, 549, 610, 644, 645 (all text search)		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST (USPT, PGPB, USOC, EPAB, JPAB); DialogPRO (Engineering and Patent); Google Scholar Search Terms: two dimensional electrophoresis, 2D electrophoresis, electrophoresis, reducing, alkylating, reduc?, alkylat?		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2003/0221963 A1 (BJELLQVIST, B. et al.) 4 December 2003 (04.12.2003), paragraphs 0007 - 0010, 0013, 0016, 0018, 0019, 0020, 0060, 0061, 0086, 0088, 0107 - 0109	1-4, 7-12, 15-20 ----- 5, 6, 13, 14
Y	US 2004/0108209 A1 (HERBERT, B. et al.) 10 June 2004 (10.06.2004), paragraphs 0002, 0033, 0076	5, 6, 13, 14
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent but 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 11 March 2007 (11.03.2007)	Date of mailing of the international search report 02 MAY 2007	
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: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774	