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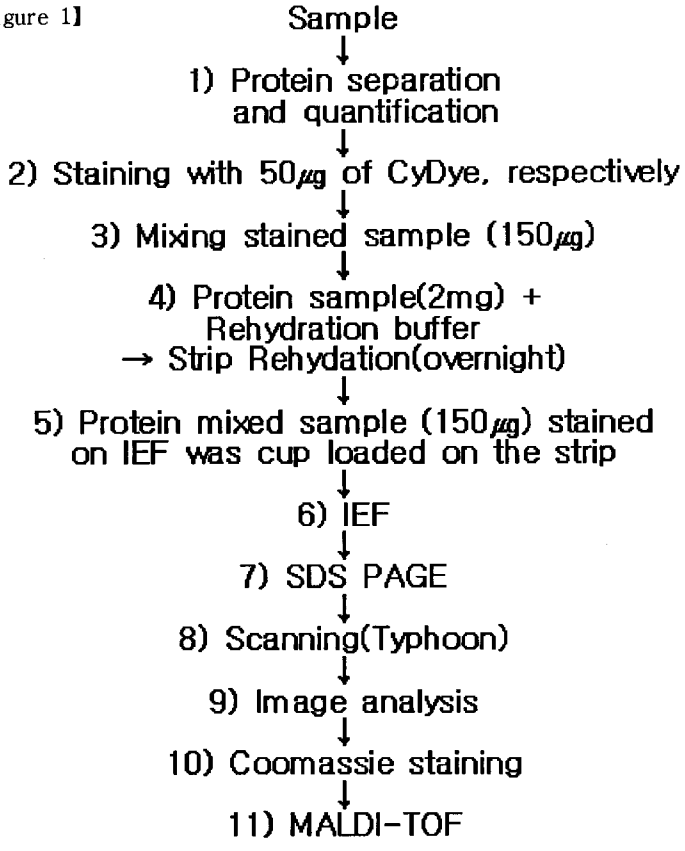
(54) Title: NOVEL ANALYTICAL METHOD FOR PROTEIN

【Figure 1】



(57) Abstract: Disclosed is a method of analyzing a protein, and more particularly, a method of analyzing a protein, comprising the steps of: (A) labeling small amounts of the protein groups with CyDyes having different fluorescence properties, respectively; (B) mixing 50~100jUg of each of the protein groups, labeled in step (A), with l~5rag of each of one or more of the unlabeled protein groups, and subjecting the mixture to electrophoresis; (C) subjecting the electrophoresed gel to fluorescence analysis to detect a difference in protein distribution between the protein groups; and (D) excising spot(s), showing the difference in protein distribution, from the gel, and isolating and identifying a protein, which is different between the protein groups, from the spots. According to the present invention, a qualitative and quantitative analysis can be performed with a difference in the fluorescence of CyDye having very high sensitivity, and a protein can be identified using MALDI-TOF simultaneously while analyzing in a gel. Thus, the limitation of reproducibility can be overcome, and the time and cost for analysis can be remarkably reduced. Further, since two proteins can be simultaneously analyzed in a gel, the method can be effectively employed when two proteins are compared and analyzed each other, and then a protein is identified.

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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)

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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)

eKIPASS, WPI, USPTO, PAJ "differential electrophoresis, 2D, DIGE, fluorescent dye, Cy3, Cy5, etc."

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GE ZHOU et al. '2D differential in-gel electrophoresis for the identification of esophageal scans cell cancer-specific protein markers.' In: Molecular & Cellular Proteomics. February 2002, Vol.1(2), pp.117-123. See the whole document.	1-5
A	NILESH S. TANNU and SCOTT E. HEMBY 'Two-dimensional fluorescence difference gel electrophoresis for comparative protomics profiling.' In: National Protocols. January 2006, Vol.1(4), pp.1732-1742. See the whole document.	1-5
A	THOMAS HREBICEK et al. 'Effect of CyDye minimum labeling in differential gel electrophoresis on the reliability of protein identification.' In: Electrophoresis. April 2007, Vol.28(7), pp.1161-1169. See the whole document.	1-5
A	ANNEMIEKE KOLKMAN et al. 'Double standards in quantitative proteomics.' In: Molecular & Cellular Proteomics. March 2005, Vol.4(3), pp.255-266. See the whole document.	1-5

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JOANNE SHAW et al. 'Evaluation of saturation labeling two-dimensional difference gel electrophoresis fluorescent dyes', In: Proteomics. July 2003, Vol.3(7), pp.1181-1195. See the whole document.	1-5
A	WO 2006-095674 A1 (ST. MARIANNA UNIVERSITY SCHOOL OF MEDICINE, JP) 14 Sep. 2006 See the whole document.	1-5
P, A	US 2007-0248659 A1 (DAVID SHANAHAN et al., US) 25 Oct. 2007 See the whole document.	1-5

INTERNATIONAL SEARCH REPORT

Information on patent family members

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