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60/332,965 19 November 2001 (19.11.2001) US(71) Applicant (for all designated States except AT, US): **NOVARTIS AG** [CH/CH]; Lichtstrasse 35, CH-4056 Basel (CH).(71) Applicant (for AT only): **NOVARTIS-ERFINDUNGEN VERWALTUNGSGESELLSCHAFT MBH** [AT/AT]; Brunner Strasse 59, AT-1230 Vienna (AT).

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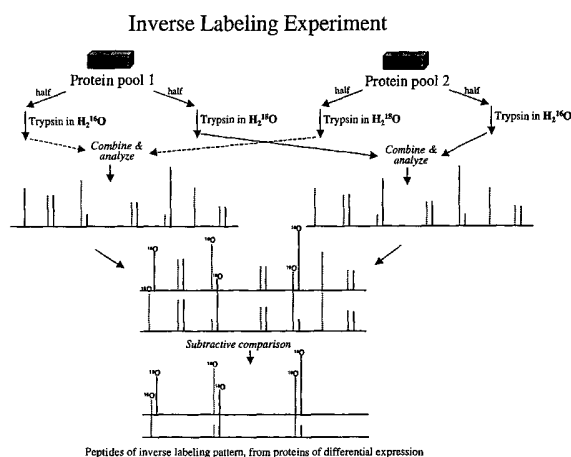
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(54) Title: INVERSE LABELING METHOD FOR THE RAPID IDENTIFICATION OF MARKER/TARGET PROTEINS



(57) **Abstract:** A novel procedure for performing protein labeling for comparative proteomics termed inverse labeling is provided for the rapid identification of marker or target proteins. With this method, to evaluate protein expression of a disease or a drug treated sample in comparison with a control sample, two converse collaborative labeling experiments are performed in parallel. In one experiment the perturbed sample (by disease or by drug treatment) is isotopically heavy-labeled, whereas, the control is isotopically heavy-labeled in the second experiment. When mixed and analyzed with its unlabeled or isotope light counterpart for differential comparison, a characteristic inverse labeling pattern is observed between the two parallel analyses for proteins that are differentially expressed to an appreciable level. In particularly useful embodiments, protein labeling is achieved through proteolytic ¹⁸O-incorporation into peptides as a result of proteolysis performed in ¹⁸O-water, metabolic incorporation of ¹⁵N (or ¹³C and ²H) into proteins, and chemically tagging proteins with an isotope-coded tag reagent such as an isotope-coded affinity tag reagent.



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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

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A. CLASSIFICATION OF SUBJECT MATTER

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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)

IPC 7 G01N

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 practical, search terms used)

EPO-Internal, PAJ, WPI Data, MEDLINE, BIOSIS, EMBASE, SCISEARCH, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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- *Z* document member of the same patent family

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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