

Title (en)

PHOSPHORYLATED POLYPEPTIDES AND USES RELATED THERETO

Title (de)

PHOSPHORYLIERTE POLYPEPTIDE UND IHRE VERWENDUNG

Title (fr)

POLYPEPTIDES PHOSPHORYLES ET UTILISATIONS CORRESPONDANTES

Publication

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Application

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Abstract (en)

[origin: WO0192469A2] Methods to generate modified polypeptides, modified antibodies, stably phosphorylated modified polypeptides, stably phosphorylated modified antibodies, polynucleotide sequences encoding the polypeptides, and uses thereof are provided. A computer-aided molecular modeling method is also provided to generate modified phosphorylatable polypeptides, particularly monoclonal antibodies (MAbs) for use in the diagnosis and treatment of cancers and other diseases. The corresponding MAbs contain heterologous recognition sites for polypeptide kinases and can be labeled by an identifiable label, such as radio-isotope $<32>P$. The phosphate group(s) attached to the phosphorylated polypeptide is unusually stable due to engineered intramolecular interactions between the phosphate group and its neighbouring groups. Polynucleotide sequences which encode a monoclonal antibody containing sequences encoding a putative phosphorylation site, and methods for analyzing the biochemical properties of a polypeptide by using molecular modeling tools, are also disclosed.

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- [X] EP 0372707 A2 19900613 - PESTKA SIDNEY
- [X] PESTKA S ET AL: "Introduction of Protein Kinase Recognition Sites into Proteins: A Review of Their Preparation, Advantages, and Applications", PROTEIN EXPRESSION AND PURIFICATION, ACADEMIC PRESS, SAN DIEGO, CA, US, vol. 17, no. 2, November 1999 (1999-11-01), pages 203 - 214, XP004441603, ISSN: 1046-5928
- [X] LIN L ET AL: "Construction of Phosphorylatable Chimeric Monoclonal Antibody CC49 with a Casein Kinase I Recognition Site", PROTEIN EXPRESSION AND PURIFICATION, ACADEMIC PRESS, SAN DIEGO, CA, US, vol. 15, no. 1, February 1999 (1999-02-01), pages 83 - 91, XP004441745, ISSN: 1046-5928
- [X] LIN L ET AL: "CONSTRUCTION OF PHOSPHORYLABLE MONOCLONAL ANTIBODY TO A TUMOR-ASSOCIATED ANTIGEN", CANCER RESEARCH, AMERICAN ASSOCIATION FOR CANCER RESEARCH, BALTIMORE, MD, US, vol. 56, no. 18, 15 September 1996 (1996-09-15), pages 4250 - 4254, XP001156392, ISSN: 0008-5472
- [X] LIN L ET AL: "CONSTRUCTION OF PHOSPHORYLABLE CHIMERIC MONOCLONAL ANTIBODY CC49", INTERNATIONAL JOURNAL OF ONCOLOGY, EDITORIAL ACADEMY OF THE INTERNATIONAL JOURNAL OF ONCOLOGY,, GR, vol. 13, no. 1, July 1998 (1998-07-01), pages 115 - 120, XP009023663, ISSN: 1019-6439
- [X] LIN L ET AL: "CONSTRUCTION OF PHOSPHORYLABLE MONOCLONAL ANTIBODY CC49 WITH A CASEIN KINASE II RECOGNITION SITE", ANTICANCER RESEARCH, HELENIC ANTICANCER INSTITUTE, ATHENS,, GR, vol. 18, no. 6A, November 1998 (1998-11-01), pages 3971 - 3978, XP009023665, ISSN: 0250-7005
- [PX] PESTKA S ET AL: "Use of phosphorylation site tags in proteins", METHODS IN ENZYMOLOGY 2000 UNITED STATES, vol. 327, 17 October 2000 (2000-10-17), pages 594 - 613, XP001157109, ISSN: 0076-6879
- [X] MOHANRAJ D ET AL: "Expression and radiolabeling of recombinant proteins containing a phosphorylation motif", PROTEIN EXPRESSION AND PURIFICATION, vol. 8, no. 2, 1996, pages 175 - 182, XP002310941, ISSN: 1046-5928
- [X] FRYXELL D ET AL: "Genetic construction of a phosphorylation site in ricin A chain: Specific radiolabeling of recombinant proteins for localization and degradation studies", BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 210, no. 2, 1995, pages 253 - 259, XP002310942, ISSN: 0006-291X
- [X] WU J ET AL: "IDENTIFYING SUBSTRATE MOTIFS OF PROTEIN KINASES BY A RANDOM LIBRARY APPROACH", BIOCHEMISTRY, AMERICAN CHEMICAL SOCIETY. EASTON, PA, US, vol. 33, 1994, pages 14825 - 14833, XP000952722, ISSN: 0006-2960
- [X] KEMP B E ET AL: "ROLE OF MULTIPLE BASIC RESIDUES IN DETERMINING THE SUBSTRATE SPECIFICITY OF CYCLIC AMP DEPENDENT PROTEIN KINASE", JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 252, no. 14, 1977, pages 4888 - 4894, XP002310943, ISSN: 0021-9258
- See references of WO 0192469A2

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