

Title (en)  
BIOMARKER FOR MELK ACTIVITY AND METHODS OF USING SAME

Title (de)  
BIOMARKER FÜR MELKAKTIVITÄT UND VERFAHREN ZUR VERWENDUNG DAVON

Title (fr)  
BIOMARQUEUR DE L'ACTIVITÉ DE MELK ET SES PROCÉDÉS D'UTILISATION

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Application  
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Abstract (en)  
[origin: WO2015073509A2] The methods of the present invention, relate to the surprising determination that the level of phosphorylation of position 406 (e.g., a serine residue.) of human eukaryotic initiation factor 4B (eIF4B), or a corresponding phosphorylatable amino acid of an ortholog thereof, serves as a biomarker for MELK enzymatic (e.g., kinase) and/or oncogenic activity. The methods of the present invention further relate to the surprising determination that the level of phosphorylation of position 3 (e.g., a threonine residue) and/or position 10 (e.g., a serine residue) and/or position 11 (e.g., a threonine residue) of human eIF4B, or a corresponding phosphorylatable amino acid of an ortholog thereof, also serves as a biomarker for MELK enzymatic (e.g., kinase) and/or oncogenic activity.

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Citation (search report)  
• [AD] WO 2013109388 A2 20130725 - ONCOTHERAPY SCIENCE INC [JP]  
• [AD] WO 2013045539 A1 20130404 - IMG INST FUER MEDIZINISCHE GENOMFORSCHUNG PLANUNGSGESELLSCHAFT M B H [AT], et al  
• [A] SUYOUN CHUNG ET AL: "MELK inhibitor, novel molecular targeted therapeutics for human cancer stem cells", CELL CYCLE, vol. 12, no. 11, 1 June 2013 (2013-06-01), US, pages 1655 - 1656, XP055370762, ISSN: 1538-4101, DOI: 10.4161/cc.24988  
• [AD] SUYOUN CHUNG ET AL: "Development of an orally-administrative MELK-targeting inhibitor that suppresses the growth of various types of human cancer.", ONCOTARGET JAN 2012, vol. 3, no. 12, 1 December 2012 (2012-12-01), pages 1629 - 1640, XP055115455, ISSN: 1949-2553, DOI: 10.18632/oncotarget.790  
• [A] I. NAKANO ET AL: "Siomycin A targets brain tumor stem cells partially through a MELK-mediated pathway", NEURO-ONCOLOGY, vol. 13, no. 6, 9 May 2011 (2011-05-09), US, pages 622 - 634, XP055370701, ISSN: 1522-8517, DOI: 10.1093/neuonc/nor023  
• [A] NAKANO ICHIRO ET AL: "Maternal embryonic leucine zipper kinase is a key regulator of the proliferation of malignant brain tumors, including brain tumor stem cells", JOURNAL OF NEUROSCIENCE RESEARCH, WILEY-LISS, US, vol. 86, no. 1, 1 January 2008 (2008-01-01), pages 48 - 60, XP002527172, ISSN: 0360-4012, [retrieved on 20070824], DOI: 10.1002/JNR.21471  
• [T] YUBAO WANG ET AL: "Mitotic MELK-eIF4B signaling controls protein synthesis and tumor cell survival", PROCEEDINGS NATIONAL ACADEMY OF SCIENCES PNAS, vol. 113, no. 35, 15 August 2016 (2016-08-15), US, pages 9810 - 9815, XP055370320, ISSN: 0027-8424, DOI: 10.1073/pnas.1606862113  
• [T] WENBIN JI ET AL: "OTSSP167 Abrogates Mitotic Checkpoint through Inhibiting Multiple Mitotic Kinases", PLOS ONE, vol. 11, no. 4, 15 April 2016 (2016-04-15), pages e0153518, XP055370874, DOI: 10.1371/journal.pone.0153518  
• See references of WO 2015073509A2

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