Revision 3

Store at -20C

#2274

MELK Antibody

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H	Endogenous	74	Rabbit	#Q14680	9833

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

MELK antibody detects endogenous levels of total MELK protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino acids near the carboxy-terminus of human MELK. Antibodies are purified by protein A and peptide affinity chromatography.

Background

MELK (Maternal Embryonic Leucine zipper Kinase, MPK38, KIAA0175) is a member of the Snf1/AMPK related kinase family. It is implicated in stem cell renewal, cell cycle progression and pre-m-RNA splicing (1-3). MELK is also a marker for self-renewing multipotent neural progenators, and may function in embryonic and postnatal forebrain development (4). While other members of this kinase family are activated by LKB1 and CAMKII mediated phosphorylation of the T-loop, MELK is not (5-7). Regulation of activation appears complex since MELK overexpressed in mammalian cells is inactive (7). Some evidence suggests that activation occurs through autophosphorylation of Thr167 and Ser171, although a number of additional autophosphorylation sites have been suggested (8). Recently, phosphorylations of Thr449, Thr451 and Thr481 have been specifically detected during mitosis, and are thought to occur via MPF and MAPK pathways (9). MELK has broad substrate specificity in vitro: substrates include ZPR9 (10), NIPP1 (3) and cdc25B (2), although the significance of MELK mediated phosphorylation of these proteins is unclear.

Finally, recent studies on human tumor samples and cell lines suggest that MELK expression is frequently elevated in cancer relative to normal tissues (11). MELK may provide a growth advantage for neoplastic cells, and may be a potential target for anti-cancer therapies.

Background References

1. Heyer, B.S. et al. (1999) *Dev. Dyn.* 215, 344-51.
2. Davezac, N. et al. (2002) *Oncogene* 21, 7630-41.
3. Vulsteke, V. et al. (2004) *J. Biol. Chem.* 279, 8642-7.
4. Nakano, I. et al. (2005) *J. Cell Biol.* 170, 413-27.
5. Tassan, J.P. and Le Goff, X. (2004) *Biol. Cell* 96, 193-9.
6. Woods, A. et al. (2003) *Curr. Biol.* 13, 2004-8.
7. Lizcano, J.M. et al. (2004) *EMBO J.* 23, 833-43.
8. Beullens, M. et al. (2005) *J. Biol. Chem.* 280, 40003-11.
9. Badouel, C. et al. (2006) Cell Cycle. 5, 883-889.
10. Seong, H.A. et al. (2002) *Biochem. J.* 361, 597-604.
11. Gray, D. et al. (2005) *Cancer Res.* 65, 9751-61.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.