

MetAP2 (D3I1H) Rabbit mAb

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: W	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 63	Source/Isotype: Rabbit IgG	UniProt ID: #P50579	Entrez-Gene Id: 10988
---------------------------	--------------------------------	-----------------------------------	------------------------	--------------------------------------	-------------------------------	---------------------------------

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

MetAP2 (D3I1H) Rabbit mAb recognizes endogenous levels of total MetAP2 protein. Based upon sequence alignment, this antibody is not predicted to cross-react with MetAP1.

Species predicted to react based on 100% sequence homology

Hamster, Dog, Pig, Horse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly390 of human MetAP2 protein.

Background

Eukaryotic initiation factor 2 (eIF2)-associated glycoprotein, p67/methionine aminopeptidase 2 (MetAP2) is one of the three known MetAPs responsible for the co-translational processing of the N-terminal initiator methionine from nascent proteins in cells. MetAP2 regulates the rates of global protein synthesis by controlling the levels of eIF2 α phosphorylation (1). MetAP2 has also been shown to bind Erk1/2 to inhibit their activation and activity, thus connecting the protein synthesis machinery with the cell signaling pathway mediated by Erk1/2 MAP kinases (2-4). Although MetAP2 is characterized as having aminopeptidase activity that removes the N-terminal methionine from nascent peptides *in vitro*, mounting evidence suggests that MetAP2 has no methionine aminopeptidase activity. Rather, MetAP2 possesses auto-proteolytic activity that can be inhibited by several small molecule inhibitors including anti-angiogenic drugs, fumagillin and its derivatives (5). It has also been demonstrated that O-GlcNAcylation of MetAP2 plays a major role in its stability, eIF2 α binding, and maintenance of eIF2 α phosphorylation (6).

MetAP2 knockout mice show embryonic lethality, suggesting its role in embryonic development and survival at the initiation of gastrulation (7). It is likely that lowering the levels of MetAP2 in mammalian cells causes cell growth inhibition and leads to apoptosis due to the high levels of eIF2 α phosphorylation that inhibits global protein synthesis (8). During pathological or various stress conditions, MetAP2 dissociates from eIF2 subunits possibly due to its deglycosylation-induced autoproteolytic cleavage. As a result, eIF2 α becomes hyperphosphorylated and global protein synthesis is inhibited. eIF2 complex-dissociated MetAP2 also displays a higher affinity toward Erk1/2, which results in the blockade of Erk1/2 activity. Thus, MetAP2 mediates cooperation between cell signaling and protein synthesis machinery to regulate cell growth and proliferation during physiological and pathological conditions (9). Research studies have shown higher expression of MetAP2 in human cancers, supporting the contention that MetAP2 plays a role in oncogenesis. For example, investigators have reported high MetAP2 expression in follicular lymphomas, large B-cell lymphomas, and Burkitt's lymphomas (10). Elevated expression of MetAP2 has also been reported in human colorectal adenocarcinomas (11).

Background References

1. Datta, B. (2000) *Biochimie* 82, 95-107.
 2. Datta, B. et al. (2004) *Arch Biochem Biophys* 427, 68-78.
 3. Datta, B. et al. (2004) *Biochemistry* 43, 14821-31.
 4. Datta, B. et al. (2005) *Exp Cell Res* 303, 174-82.
 5. Bradshaw, R.A. and Yi, E. (2002) *Essays Biochem* 38, 65-78.
 6. Datta, B. et al. (1999) *Exp Cell Res* 250, 223-30.
 7. Yeh, J.R. et al. (2006) *Proc Natl Acad Sci U S A* 103, 10379-84.
 8. Datta, B. and Datta, R. (1999) *Exp Cell Res* 246, 376-83.
 9. Ghosh, A. et al. (2006) *Exp Cell Res* 312, 3184-203.
 10. Kanno, T. et al. (2002) *Lab Invest* 82, 893-901.
 11. Selvakumar, P. et al. (2004) *Clin Cancer Res* 10, 2771-5.
-

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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.

Orders: 877-616-CELL (2355) • orders@cellsignal.com • Support: 877-678-TECH (8324) • info@cellsignal.com • Web: cellsignal.com
For Research Use Only. Not for Use in Diagnostic Procedures.