Revision 1

Store at -20C

#9592

SMG-1 (V72) Antibody

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H Mk	Endogenous	410	Rabbit	#Q96Q15	23049

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	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

SMG-1 (V72) Antibody detects endogenous levels of total SMG-1 protein. The antibody cross-reacts with a 100 kDa band of unknown origin. By confocal immunofluorescence, the antibody labels the mitochondria of U-2 OS cells (7).

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human SMG-1.

Background

SMG-1 is a member of the phosphoinositide 3-kinase-related kinase (PIKK) family, which includes ATM, ATR, mTOR, DNA-PKcs, and TRRAP (1,2). Activated by DNA damage, SMG-1 has been shown to phosphorylate p53 and hUpf1 (SMG-2) (1-4). hUpf1 is a subunit of the surveillance complex that allows degradation of messenger RNA species containing premature termination codons (PTCs). This process, known as nonsense-mediated mRNA decay (NMD), prevents the translation of truncated forms of proteins that may result in gain of function or dominant negative species. NMD occurs under normal cellular conditions as well as in response to damage (5,6). SMG-1 has also been shown to affect cell death receptor signaling and to protect cells from extrinsically induced apoptotic cell death (7).

Background References

1. Denning, G. et al. (2001) *J Biol Chem* 276, 22709-14.
2. Yamashita, A. et al. (2001) *Genes Dev* 15, 2215-28.
3. Brumbaugh, K.M. et al. (2004) *Mol Cell* 14, 585-98.
4. Ohnishi, T. et al. (2003) *Mol Cell* 12, 1187-200.
5. Li, Z.Y. et al. (2006) *Curr Med Chem* 13, 1693-705.
6. Mendell, J.T. et al. (2004) *Nat Genet* 36, 1073-8.
7. Oliveira, V. et al. (2008) *J Biol Chem* 283, 13174-84.

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 **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **Mk:** Monkey

Trademarks and Patents

Limited Uses

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