Revision 1

Store at -20C

#13405

TRAP1/HSP75 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	H	Endogenous	75	Rabbit	#Q12931	10131

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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

TRAP1/HSP75 Antibody recognizes endogenous levels of total TRAP1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Glu150 of human TRAP1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

TNF receptor-associated protein 1 (TRAP1), also known as HSP75, is a mitochondrial chaperone and ATPase that was originally identified as a protein that interacts with the TNF receptor. Although a member of the HSP90 family, TRAP1 is not heat-inducible but is upregulated by glucose deprivation, oxidative injury, and UV irradiation. An amino-terminal mitochondrial localization sequence results in localization of TRAP1 within mitochondria (1). Overexpression of TRAP1 decreases oxidative stress, suggesting a protective role in ischemia injury (2). Research studies demonstrate that silencing of TRAP1 enhances cytochrome C release and apoptosis, with additional evidence indicating that TRAP1 can protect cells from cell death by inhibiting the generation of reactive oxygen species (3). TRAP1 is a substrate of the mitochondrial serine/threonine kinase PINK1, whose corresponding gene is mutated in some forms of early-onset Parkinson's disease (PD). PINK1 protects cells from oxidative stress-induced cell death by suppressing release of cytochrome C from mitochondria. PD-linked *PINK1* mutations impair the ability of PINK1 to phosphorylate TRAP1 and leads to impaired cell survival (4). Finally, TRAP1 alleviates α-synuclein induced toxicity and rescues the PINK1 loss-of-function phenotype (5).

Background References

1. Felts, S.J. et al. (2000) *J Biol Chem* 275, 3305-12.
2. Hua, G. et al. (2007) *J Biol Chem* 282, 20553-60.
3. Voloboueva, L.A. et al. (2008) *J Cereb Blood Flow Metab* 28, 1009-16.
4. Pridgeon, J.W. et al. (2007) *PLoS Biol* 5, e172.
5. Butler, E.K. et al. (2012) *PLoS Genet* 8, e1002488.

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

Cross-Reactivity Key

H: Human

Trademarks and Patents

Limited Uses

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