Revision 1

Store at -20C

#4444

Sharpin Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	43	Rabbit	#Q9H0F6	81858

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

Sharpin Antibody recognizes endogenous levels of total Sharpin protein. This antibody does not cross-react with HOIL-1/RBCK1.

Source / Purification

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

Background

Shank-associated RH domain-interacting protein (*Sharpin*), also known as *SIPL1*, is a highly conserved gene among many mammalian species and is ubiquitously expressed in various types of cells and tissues. Sharpin harbors multiple functional motifs including an amino terminal coiled-coil (CC) domain, which has been shown to mediate the interaction between Sharpin and the scaffold protein SHANK (1). The other two domains, ubiquitin-like domain (UBL) and NPL4 zinc finger domain (NZF), facilitate ubiquitin-mediated protein recognition and degradation (2). Recent studies have shown that both UBL and NZF domains are essential for Sharpin to exert its function in part through ubiquitin-mediated mechanisms (3-5). Although Sharpin was initially identified as a scaffold protein within the postsynaptic density of neurons (1), recent studies have identified Sharpin as a novel modulator of immune and inflammatory diseases. An emerging mechanistic model suggests that Sharpin functions as an important adaptor component of the Linear Ubiquitin Chain Assembly Complex (LUBAC) that modulates activation of the canonical NF-κB signaling pathway (3,4,6,7), thereby regulating cell survival and apoptosis, cytokine production, and lymphoid tissue development. Indeed, mice with spontaneous mutations in the *Sharpin* gene develop chronic proliferative dermatitis that is characterized by eosinophilic inflammation of the skin and dysregulated lymphoid tissue development (8).

Background References

1. Lim, S. et al. (2001) *Mol Cell Neurosci* 17, 385-97.
2. Grabbe, C. and Dikic, I. (2009) *Chem Rev* 109, 1481-94.
3. Ikeda, F. et al. (2011) *Nature* 471, 637-41.
4. Tokunaga, F. et al. (2011) *Nature* 471, 633-6.
5. Iwai, K. (2011) *Cell Cycle* 10, 3095-104.
6. Gerlach, B. et al. (2011) *Nature* 471, 591-6.
7. Tokunaga, F. et al. (2009) *Nat Cell Biol* 11, 123-32.
8. Seymour, R.E. et al. (2007) *Genes Immun* 8, 416-21.

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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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