10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Pellino 1 Antibody

Catalog # ASC11563

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q96FA3
Other Accession	NP_065702, 11037063
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	46286
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Pellino 1 antibody can be used for detection of Pellino 1 by Western blot at 1 - 2 □g/mL.

Additional Information

Gene ID	57162
Other Names	E3 ubiquitin-protein ligase pellino homolog 1, Pellino-1, 6.3.2.-, Pellino-related intracellular-signaling molecule, PELI1, PRISM
Target/Specificity	PELI1;
Reconstitution & Storage	Pellino 1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	Pellino 1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PELI1 {ECO:0000303|PubMed:30952868}
Synonyms	PRISM
Function	E3 ubiquitin ligase catalyzing the covalent attachment of ubiquitin moieties onto substrate proteins (PubMed:12496252, PubMed:17675297, PubMed:29883609, PubMed:30952868). Involved in the TLR and IL-1 signaling pathways via interaction with the complex containing IRAK kinases and TRAF6 (PubMed:12496252, PubMed:17675297). Acts as a positive regulator of inflammatory response in microglia through activation of NF-kappa-B and MAP kinase (By similarity). Mediates 'Lys- 63'-linked polyubiquitination of IRAK1 allowing subsequent NF-kappa-B activation (PubMed:12496252,

	PubMed:17675297). Conjugates 'Lys-63'- linked ubiquitin chains to the adapter protein ASC/PYCARD, which in turn is crucial for NLRP3 inflammasome activation (PubMed:34706239). Mediates 'Lys-48'-linked polyubiquitination of RIPK3 leading to its subsequent proteasome-dependent degradation; preferentially recognizes and mediates the degradation of the 'Thr-182' phosphorylated form of RIPK3 (PubMed:29883609). Negatively regulates necroptosis by reducing RIPK3 expression (PubMed:29883609). Mediates 'Lys-63'-linked ubiquitination of RIPK1 (PubMed:29883609). Following phosphorylation by ATM, catalyzes 'Lys-63'-linked ubiquitination of NBN, promoting DNA repair via homologous recombination (PubMed:30952868). Negatively regulates activation of the metabolic mTORC1 signaling pathway by mediating 'Lys-63'-linked ubiquitination of mTORC1-inhibitory protein TSC1 and thereby promoting TSC1/TSC2 complex stability (PubMed:33215753).
Cellular Location	Chromosome. Note=Localizes to DNA double-strand breaks (DSBs) in response to DNA damage.
Tissue Location	Expressed at high levels in normal skin but decreased in keratinocytes from toxic epidermal necrolysis (TEN) patients (at protein level).

Background

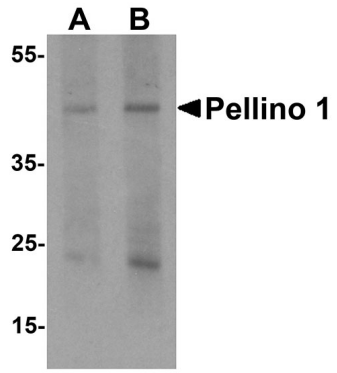
Pellino 1 Antibody: The Pellino proteins are a highly homologous family of E3 ubiquitin ligases that act as upstream mediators in Toll-like receptor (TLR) pathways that lead to activation of MAP kinases and transcription factors. Pellino 1 is required for interleukin-1-mediated signaling through its interaction with the IRAK4-IRAK-TRAF6 complex, ultimately resulting in the activation of NF-κB. Like other members of the Pellino family, Pellino 1 is an E3 ubiquitin ligase, able to catalyze the polyubiquitination of IRAK1. It is activated via phosphorylation by either IRAK1 and IRAK4 or the IKK-related kinases IKK-ε and TBK1. In addition to phosphorylation, Pellino 1 activity is also modulated via ubiquitination and sumoylation.

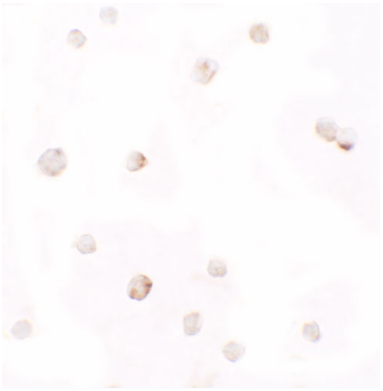
References

Moynagh PN. The Pellino family: IRAK E3 ligases with emerging roles in innate immune signaling. Trends Immunol. 2009; 30:33-42.
Jiang Z, Johnson J, Nie H, et al. Pellino 1 is required for interleukin-1 (IL-1)-mediated signaling through its interaction with the IL-1 receptor-associated kinase 4 (IRAK4)-IRAK-tumor necrosis factor receptor-associated factor 6 (TRAF6) complex. J. Biol. Chem. 2003; 278:10952-6
Butler MP, Hanly JA, and Moynagh PN. Kinase-active interleukin-1 receptor-associated kinases promote polyubiquitination and degradation of the Pellino family: direct evidence for Pellino proteins being ubiquitin-protein isopeptide ligases. J. Biol. Chem. 2007; 282:29729-37.
Goh ET, Arthur JS, Cheung PC, et al. Identification of the protein kinases that activate the E3 ubiquitin ligase Pellino 1 in the innate immune system. Biochem. J. 2012; 441:339-46

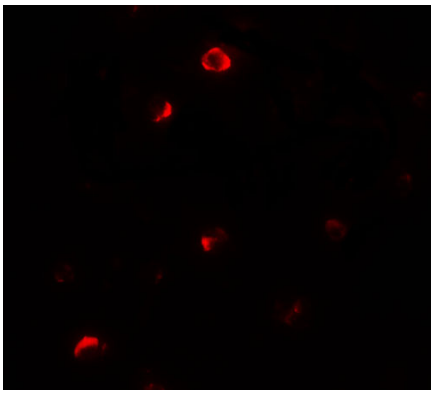
Images

Western blot analysis of Pellino 1 in human liver tissue lysate with Pellino 1 antibody at (A) 1 and (B) 2 µg/mL.





Immunocytochemistry of Pellino in HepG2 cells with Pellino 1 antibody at 2.5 µg/ml.



Immunofluorescence of Pellino 1 in HepG2 cells with Pellino 1 antibody at 20 µg/ml.