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

NINJ1 Antibody

Catalog # ASC11852

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q92982
Other Accession	NP_004139, 148922911
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	16345
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	NINJ1 antibody can be used for detection of NINJ1 by Western blot at 1 - 2 g/ml. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	4814
Other Names	Ninjurin-1, Nerve injury-induced protein 1, NINJ1
Target/Specificity	NINJ1; NINJ1 antibody is human, mouse and rat reactive.
Reconstitution & Storage	NINJ1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	NINJ1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NINJ1 {ECO:0000303|PubMed:33472215, ECO:0000312|HGNC:HGNC:7824}
Function	[Ninjurin-1]: Effector of various programmed cell death, such as pyroptosis and necroptosis, which mediates plasma membrane rupture (cytolysis) (PubMed:33472215, PubMed:36468682, PubMed:37196676, PubMed:37198476, PubMed:38614101, PubMed:39667936). Oligomerizes in response to death stimuli and forms ring-like structures on the plasma membrane: acts by cutting and shedding membrane disks, like a cookie cutter, leading to membrane damage and loss that cannot be repaired by the cell (PubMed:38614101). Plasma membrane rupture leads to release intracellular molecules named damage-associated molecular patterns (DAMPs) that propagate the inflammatory response (PubMed:33472215, PubMed:36468682, PubMed:37196676, PubMed:37198476). Mechanistically, mediates plasma membrane rupture by introducing hydrophilic faces of 2

	alpha helices into the hydrophobic membrane (PubMed:37198476, PubMed:38614101). Induces plasma membrane rupture downstream of Gasdermin (GSDMA, GSDMB, GSDMC, GSDMD, or GSDME) or MLKL during pyroptosis or necroptosis, respectively (PubMed:33472215, PubMed:36468682, PubMed:37196676, PubMed:37198476). Acts as an effector of PANoptosis downstream of CASP1, CASP4, CASP8 and RIPK3 (By similarity). Also induces plasma membrane rupture in response to cell swelling caused by osmotic stress and ferroptosis downstream of lipid peroxidation (By similarity). Acts as a regulator of Toll-like receptor 4 (TLR4) signaling triggered by lipopolysaccharide (LPS) during systemic inflammation; directly binds LPS (PubMed:26677008). Involved in leukocyte migration during inflammation by promoting transendothelial migration of macrophages via homotypic binding (By similarity). Promotes the migration of monocytes across the brain endothelium to central nervous system inflammatory lesions (PubMed:22162058). Also acts as a homophilic transmembrane adhesion molecule involved in various processes such as axonal growth, cell chemotaxis and angiogenesis (PubMed:33028854, PubMed:8780658, PubMed:9261151). Promotes cell adhesion by mediating homophilic interactions via its extracellular N-terminal adhesion motif (N-NAM) (PubMed:33028854, PubMed:8780658, PubMed:9261151). Involved in the progression of the inflammatory stress by promoting cell-to-cell interactions between immune cells and endothelial cells (PubMed:22162058, PubMed:26677008, PubMed:32147432). Plays a role in nerve regeneration by promoting maturation of Schwann cells (PubMed:8780658, PubMed:9261151). Acts as a regulator of angiogenesis (PubMed:33028854). Promotes the formation of new vessels by mediating the interaction between capillary pericyte cells and endothelial cells (By similarity). Promotes osteoclasts development by enhancing the survival of prefusion osteoclasts (By similarity). Also involved in striated muscle growth and differentiation (By similarity).
Cellular Location	[Ninjurin-1]: Cell membrane; Multi-pass membrane protein. Synaptic cell membrane {ECO:0000250|UniProtKB:O70131}; Multi-pass membrane protein
Tissue Location	Widely expressed in both adult and embryonic tissues, primarily those of epithelial origin

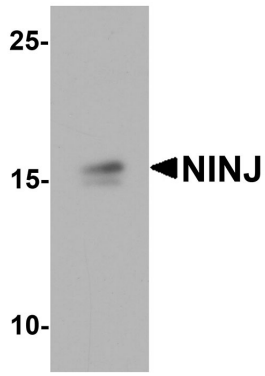
Background

Ninjurin-1 (NINJ1) is a homophilic adhesion molecule that is strongly induced in dorsal root ganglion (DRG) and Schwann cells following nerve injury and promotes neurite outgrowth of DRG neurons (1,2), suggesting that NINJ1 may play a role in nerve regeneration. NINJ1 is transcriptionally regulated by p53 and is induced by DNA damage in a p53-dependent manner. A deficiency of NINJ1 increases p53 expression, suppresses cell proliferation, but enhances apoptosis and premature senescence in a p53-dependent manner as well as radiation-induced cell mortality (3).

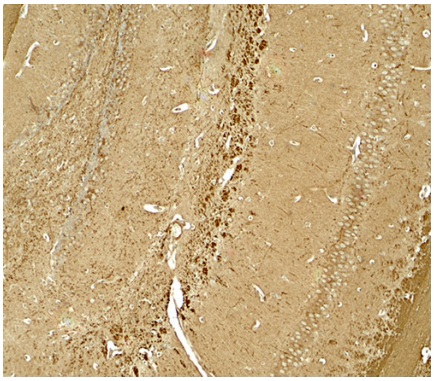
References

Araki T and Milbrandt J. Ninjurin, a novel adhesion molecule, is induced by nerve injury and promotes axonal growth. Neuron 1996; 17:353-61.
Araki T, Zimonjic DB, Popescu NC, et al. Mechanism of homophilic binding mediated by ninjurin, a novel widely expressed adhesion molecule. J. Biol. Chem. 1997; 212:21373-80.
Cho SJ, Rossi A, Jung YS, et al. Ninjurin1, a target of p53, regulates p53 expression and p53-dependent cell survival, sensecence, and radiation-induced mortality. Proc. Natl. Acad. Sci. USA 2013; 110:9362-7.

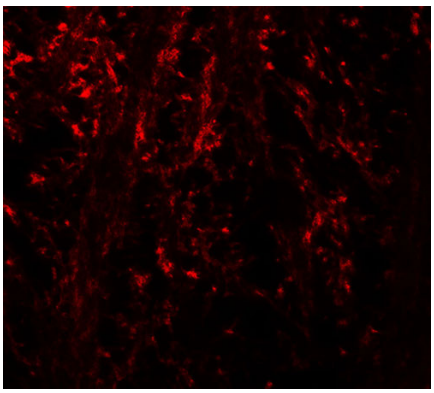
Images



Western blot analysis of NINJ1 in human brain tissue lysate with NINJ1 antibody at 1 µg/ml.



Immunohistochemistry of NINJ1 in mouse brain tissue with NINJ1 antibody at 5 µg/ml.



Immunofluorescence of NINJ1 in mouse brain tissue with NINJ1 antibody at 20 µg/ml.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.