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NK3R Antibody

Catalog # ASC10550

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P29371
Other Accession	P29371, 128364
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	52202
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	NK3R antibody can be used for detection of NK3R by Western blot at 0.5 - 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	6870
Other Names	Neuromedin-K receptor, NKR, NK-3 receptor, NK-3R, Neurokinin B receptor, Tachykinin receptor 3, TACR3, NK3R, TAC3R
Target/Specificity	TACR3; NK3R antibody does not recognize NK1R or NK2R.
Reconstitution & Storage	NK3R 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	NK3R Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TACR3
Synonyms	NK3R, TAC3R
Function	Receptor for the tachykinin neuromedin-K (neurokinin B), also able to bind and respond to tachynins substance K/neurokinin A and substance P (PubMed:1312036, PubMed:37391393). The rank order of affinity of this receptor to tachykinins is: neuromedin-K > substance K and substance P (PubMed:1312036). Neuromedin-K binding to its receptor triggers G protein-coupled receptor signaling via activation of G(q) and phosphatidylinositol hydrolysis by phospholipase C (PubMed:37391393).

	Neuromedin-K binding also triggers signaling via activation of adenylate cyclase activity which results in increased intracellular levels of cyclic AMP (cAMP) (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein

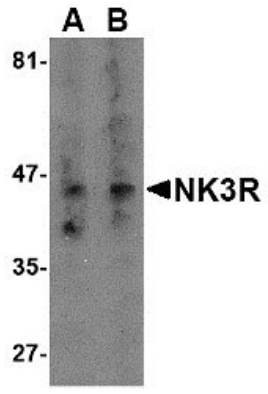
Background

NK3R Antibody: The tachykinins are a family of small peptides that include the neurotransmitters substance P, neurokinin A, and neurokinin B, which can act on three related but distinct seven transmembrane G-proteins coupled receptors, albeit at different concentrations. The NK-3 receptor (NK3R) has greatest affinity for neurokinin B and is highly expressed in the supraoptic and paraventricular nuclei. Following binding of its ligand, NK3R activates a phosphatidylinositol-calcium second messenger system. It is likely these signals lead to the release of vasopressin and oxytocin into the circulation. NK3R may be involved in learning and memory as mice lacking this gene expressed cognitive deficits compared to normal mice. Although it has been suggested that NK3R plays a role in the regulation of vagal afferent relay neurons, it is likely that these receptors are activated by substance P or neurokinin A, as the airway nerves do not express neurokinin B.

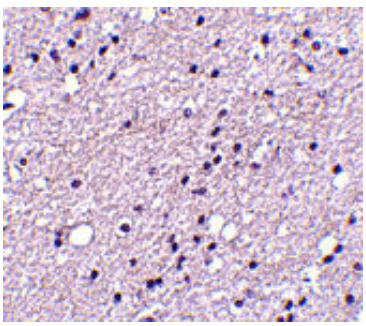
References

Maggi CA. The mammalian tachykinin receptors. Gen. Pharmacol. 1995; 26:911-44.
Ding Y-Q, Shi J, Su L-Y, et al. Receptor (NK3)-containing neurons in the paraventricular and supraoptic nuclei of the rat hypothalamus synthesize vasopressin and express fos following intravenous injection of hypotonic saline. Neurosci. 1999; 91:1077-85.
Nakajima Y, Tsuchida K, Negishi M, et al. Direct linkage of three tachykinin receptors to stimulation of both phosphatidylinositol hydrolysis and cyclic AMP cascades in transfected Chinese hamster ovary cells. J. Biol. Chem. 1992; 267:2437-42.
Haley GE and Flynn FW. Tachykinin NK3 receptor contribution to systemic release of vasopressin and oxytocin in response to osmotic and hypotensive challenge. Am. J. Regul. Integr. Comp. Physiol. 2007; 293:R931-7.

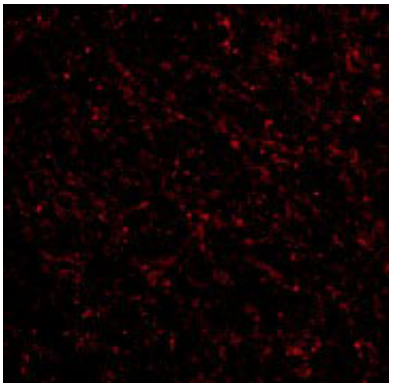
Images



Western blot analysis of NK3R in RAW264.7 cell lysate with NK3R antibody at (A) 0.5 and (B) 1 µg/mL.



Immunohistochemistry of NK3R in human brain tissue with NK3R antibody at 5 µg/mL.



Immunofluorescence of NK3R in Human Brain tissue with NK3R antibody at 20 ug/mL.