

NK3R Antibody

NK3R (IN): Neurokinin B receptor, NK-3 receptor, NK-3R, Tachykinin receptor 3, TACR3

CATALOG No.:4255

BACKGROUND:

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 (reviewed in 1). The NK-3 receptor (NK3R) has greatest affinity for neurokinin B and is highly expressed in the supraoptic and paraventricular nuclei (2). Following binding of its ligand, NK3R activates a phosphatidylinositol-calcium second messenger system (3). It is likely these signals lead to the release of vasopressin and oxytocin into the circulation (4). NK3R may be involved in learning and memory as mice lacking this gene expressed cognitive deficits compared to normal mice (5). 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 (6). NK3R antibody does not recognize NK1R or NK2R.

SOURCE:

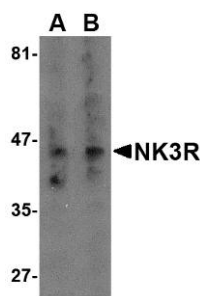
Rabbit polyclonal NK3R antibody was raised against an 18 amino acid peptide from near the center of human NK3R (GenBank accession no. P29371).

APPLICATION:

NK3R antibody can be used for detection of NK3R by Western blot at 0.5 – 1 µg/ml. (Optimal dilution should be determined by user.) RAW264.7 cell lysate can be used as positive control. NK3R antibody is human, mouse and rat reactive. **For research use only.**

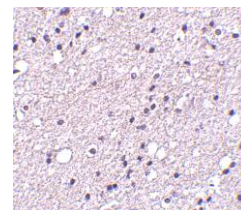
STORAGE:

NK3R antibody is supplied as immunoaffinity purified IgG in PBS containing 0.02% sodium azide. Store at 4°C, stable for one year.



Western blot analysis of NK3R in RAW264.7 cell lysate with NK3R antibody at (A) 0.5 and (B) 2 µg/ml.

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



RELATED PRODUCTS:

Blocking Peptide, Catalog No. **4255P**.

RAW264.7 Cell Lysate, Catalog No. **1283**.

REFERENCES:

1. Maggi CA. The mammalian tachykinin receptors. *Gen. Pharmacol.* 1995; 26:911-44.
2. 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.
3. 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.
4. 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.
5. Siuciak JA, McCarthy SA, Martin AN, et al. Disruption of the neurokinin-3 receptor (NK3) in mice leads to cognitive deficits. *Psychopharm. (Berl.)* 2007; epub
6. Canning BJ. Neurokinin3 receptor regulation of the airways. *Vascul. Pharmacol.* 2006; 45:227-34. (07-01D)