NKR1 Antibody / Neurokinin 1 Receptor / TACR1 [clone AFBH-20] (FY12839)

Catalog No.	Formulation	Size
FY12839	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	AFBH-20
Purity	Affinity-chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P25103
Applications	Immunoprecipitation : 2-4ug/500ug of lysate Immunohistochemistry : 2-5ug/ml Western Blot : 0.25-0.5ug/ml
Limitations	This NKR1 antibody is available for research use only.

Description

NKR1 antibody detects Neurokinin 1 receptor, a G protein-coupled receptor (GPCR) encoded by the TACR1 gene on chromosome 2p12 that mediates the biological effects of the neuropeptide Substance P. This receptor plays a central role in neurotransmission, pain perception, inflammation, and stress responses. Neurokinin 1 receptor belongs to the tachykinin receptor family, characterized by seven transmembrane helices, extracellular ligand-binding loops, and cytoplasmic regions that couple to G proteins for intracellular signaling.

Binding of Substance P to the Neurokinin 1 receptor triggers activation of phospholipase C (PLC), leading to inositol trisphosphate (IP3) production, calcium release, and activation of protein kinase C (PKC). Downstream pathways include MAPK, ERK, and NF-?B signaling cascades that regulate neuronal excitability, cytokine production, and vascular permeability. This receptor is broadly expressed in the central nervous systemÂ—particularly in pain-processing regions

such as the dorsal horn of the spinal cordÂ—and in peripheral tissues including smooth muscle, endothelial cells, and immune cells.

The NKR1 antibody is widely used in neuroscience, pharmacology, and inflammation research to study Substance P signaling, pain transmission, and GPCR-mediated pathways. Western blot analysis detects a 46 kilodalton band corresponding to the receptor, while immunohistochemistry reveals strong membrane and cytoplasmic staining in neurons and smooth muscle cells. This antibody supports investigations into tachykinin signaling and receptor modulation across different tissues.

Pharmacologically, Neurokinin 1 receptor antagonists such as aprepitant and fosaprepitant are used clinically to treat nausea, vomiting, and depression, underscoring the receptor's therapeutic relevance. Dysregulation of TACR1 signaling contributes to chronic pain, anxiety, inflammatory bowel disease, and certain cancers, where Substance P promotes cell proliferation and angiogenesis. The NKR1 antibody provides a valuable tool for characterizing receptor expression, ligand binding, and intracellular signaling dynamics under physiological and pathological conditions.

At the molecular level, Neurokinin 1 receptor undergoes desensitization and internalization following ligand binding, a process mediated by beta-arrestins and receptor phosphorylation. It can recycle back to the plasma membrane or undergo degradation depending on signal intensity. The NKR1 antibody facilitates the study of receptor trafficking, desensitization, and GPCR signaling integration. NSJ Bioreagents validates this antibody for western blotting, immunohistochemistry, and immunofluorescence, ensuring reliable detection for neuroscience and inflammation research.

Application Notes

Optimal dilution of the NKR1 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Neurokinin 1 Receptor was used as the immunogen for the NKR1 antibody.

Storage

Store the NKR1 antibody at -20oC.