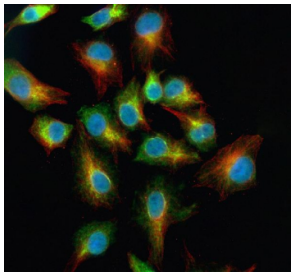
NPY2R Antibody / Neuropeptide Y receptor type 2 (FY12847)

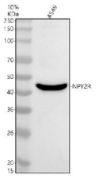
Catalog No.	Formulation	Size
FY12847	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P49146
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This NPY2R antibody is available for research use only.



Immunofluorescent staining of NPY2R using anti-NPY2R antibody (green) and anti-Beta Tubulin antibody (red). NPY2R was detected in an immunocytochemical section of cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-NPY2R antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of NPY2R using anti-NPY2R antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-NPY2R antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A specific band was detected for NPY2R at approximately 43 kDa. The expected molecular weight of NPY2R is ~43 kDa.

Description

NPY2R antibody detects Neuropeptide Y receptor type 2, a G protein-coupled receptor (GPCR) that mediates the effects of neuropeptide Y (NPY) and peptide YY (PYY) in regulating appetite, energy balance, and vascular tone. Encoded by the NPY2R gene on chromosome 4q31.3, this receptor belongs to the rhodopsin-like GPCR family and signals primarily through Gi/o proteins to inhibit adenylyl cyclase, reduce cyclic AMP production, and modulate calcium and potassium channel activity.

NPY2R is expressed in the central and peripheral nervous systems, particularly in hypothalamic nuclei involved in appetite control, as well as in adipose tissue, gastrointestinal tract, and cardiovascular system. Activation of NPY2R contributes to satiety signaling, vasoconstriction, and neuroendocrine secretion regulation. In neurons, NPY2R often acts as an autoreceptor, controlling presynaptic release of NPY and other neurotransmitters, thus fine-tuning synaptic transmission and energy homeostasis.

The NPY2R antibody is widely used in neuroscience, endocrinology, and metabolism research to investigate neuropeptide signaling, feeding behavior, and receptor pharmacology. Western blot analysis identifies a 43 kilodalton band corresponding to NPY2R, while immunohistochemistry reveals membrane-associated staining in hypothalamic neurons and vascular smooth muscle cells. This antibody supports studies examining receptor localization, ligand binding, and downstream signaling in physiological and pathological contexts.

At the molecular level, NPY2R activation influences pathways such as ERK1/2 and PI3K/AKT, affecting neuronal excitability and metabolic regulation. Altered NPY2R expression or function is linked to obesity, anxiety, hypertension, and gastrointestinal disorders. Pharmacological targeting of NPY2R offers therapeutic potential for appetite control and cardiovascular modulation. The NPY2R antibody provides a valuable tool for mapping receptor distribution and characterizing its role in neuroendocrine and metabolic signaling. NSJ Bioreagents validates this antibody for its applications, ensuring reproducible detection across neural and peripheral systems.

Application Notes

Optimal dilution of the NPY2R antibody should be determined by the researcher.

Immunogen

E.coli-derived human NPY2R recombinant protein (Position: M1-K367) was used as the immunogen for the NPY2R antibody.

Storage

After reconstitution, the NPY2R antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.