SANTA CRUZ BIOTECHNOLOGY, INC.

NPY2-R (L-17): sc-14736

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The Power to Question

BACKGROUND

A gene on chromosome 4q32.1 encodes a 381 amino acid protein, NPY2-R (also designated Neuropeptide Y receptor Y2). NPY2-R is a member of the G-protein-coupled receptor super-family, and like other members has seven putative transmembrane domains. However, NPY2-R gene consists of two exons, unlike the contiguous structure of other G-protein-coupled receptor genes. NPY2-R shares a 31% sequence identity with NPY1-R. NPY2-R is expressed in the presynaptic membranes of the central nervous system, and to a lesser extent the peripheral nervous system. NPY2-R associates (from highest to lowest affinity) with carboxyl terminals of unphosphorylate Peptide YY (PYY) (phosphorylation of PYY greatly reduces its binding affinity), NPY, and Pancreatic Peptide. Depending on the cell type, NPY2-R couples with different G proteins, which act as different second messengers. NPY2-R reduces the effects of depolarization, calcium ion currents in arterial smooth muscle by through association with NPY. NPY2-R inhibits cholecystokinin octapeptide-induced, esophageal muscle contraction, through interactions with PYY and NPY.

REFERENCES

1. Rose, P.M., et al. 1995. Cloning and functional expression of a cDNA encoding a human type 2 neuropeptide Y receptor. J. Biol. Chem. 270: 22661-22664.
2. Ammar, D.A., et al. 1996. Characterization of the human type 2 neuropeptide Y receptor gene (NPY2R) and localization to the chromosome 4q region containing the type 1 neuropeptide Y receptor gene. Genomics 38: 392-398.
3. Gehlert, D.R., et al. 1996. Expression cloning of a human brain neuropeptide Y Y2 receptor. Mol. Pharmacol. 49: 224-228.
4. Lewis, C.J., et al. 1999. Inhibition of vasoconstriction and Ca^{2+} currents mediated by neuropeptide Y Y2 receptors. J. Smooth Muscle Res. 35: 147-156.
5. Huang, S.C. 2000. Fuctional CCK-A and Y2 receptors in guinea pig esophagus. Regul. Pept. 88: 55-60.
6. Chen, Z., et al. 2001. Ser(13)-phophorylated PYY from porcine intestine with a potent biological activity. FEBS Lett. 492: 119-122.

CHROMOSOMAL LOCATION

Genetic locus: NPY2R (human) mapping to 4q32.1; Npy2r (mouse) mapping to 3 E3.

SOURCE

NPY2-R (L-17) is an affinity purified goat polyclonal antibody raised agains a peptide mapping near the C-terminus of NPY2-R of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14736 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NPY2-R (L-17) is recommended for detection of NPY2-R of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NPY2-R (L-17) is also recommended for detection of NPY2-R in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for NPY2-R siRNA (h): sc-42101, NPY2-R siRNA (m): sc-42102, NPY2-R shRNA Plasmid (h): sc-42101-SH, NPY2-R shRNA Plasmid (m): sc-42102-SH, NPY2-R shRNA (h) Lentiviral Particles: sc-42101-V and NPY2-R shRNA (m) Lentiviral Particles: sc-42102-V.

Molecular Weight of NPY2-R: 43 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kitlinska, J., et al. 2005. Differential effects of neuropeptide Y on the growth and vascularization of neural crest-derived tumors. Cancer Res. 65: 1719-1728.
2. Allen, A.R., et al. 2006. Modulation of contractile function through neuropeptide Y receptors during development of cardiomyocyte hypertrophy. J. Pharmacol. Exp. Ther. 319: 1286-1296.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.