SANTA CRUZ BIOTECHNOLOGY, INC.

GPR54 (N-20): sc-48220

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

G protein-coupled receptors (GPCRs), also designated seven transmembrane (7TM) receptors and heptahelical receptors, are a protein family which interact with G proteins (heterotrimeric GTPases) to synthesize intracellular second messengers such as diacylglycerol, cyclic AMP, inositol phosphates, and calcium ions. Their diverse biological functions range from vision and olfaction to neuronal and endocrine signaling and are involved in many pathological conditions. G protein receptor 54 (GPR54), a member of the rhodopsin family of GCPRs, is the receptor for the Kiss1 gene product, metastin. Mutations in GPCR54 are associated with a lack of puberty onset and autosomal recessive idiopathic hypogonadotropic hypogonadism, a deficient or decreased function of the gonads. Proper function of GRP54 is essential for puberty. In the rat, GRP54 is expressed in the liver, intestine and most areas of the brain, while in the human it is expressed in the placenta, pituitary, pancreas and spinal cord.

REFERENCES

1. Lee, D.K., et al. 1999. Discovery of a receptor related to the galanin receptors. FEBS Lett. 446: 103-107.
2. Seminara, S.B., et al. 2003. The GPR54 gene as a regulator of puberty. N. Engl. J. Med. 349: 1614-1627.
3. Navarro, V.M., et al. 2004. Developmental and hormonally regulated messenger ribonucleic acid expression of KiSS-1 and its putative receptor, GPR54, in rat hypothalamus and potent luteinizing hormone-releasing activity of KiSS-1 peptide. Endocrinology 145: 4565-4574.
4. Kaiser, U.B. and Kuohung, W. 2005. KiSS-1 and GPR54 as new players in gonadotropin regulation and puberty. Endocrine 26: 277-284.
5. Stathatos, N., et al. 2005. KiSS-1/GPR54 metastasis suppressor pathway increases myocyte-enriched calcineurin interacting protein 1 expression and chronically inhibits calcineurin activity. J. Clin. Endocrinol. Metab. 90: 5432-5440.

CHROMOSOMAL LOCATION

Genetic locus: KISS1R (human) mapping to 19p13.3.

SOURCE

GPR54 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of GPR54 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-48220 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

GPR54 (N-20) is recommended for detection of GPR54 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for GPR54 siRNA (h): sc-60747, GPR54 shRNA Plasmid (h): sc-60747-SH and GPR54 shRNA (h) Lentiviral Particles: sc-60747-V.

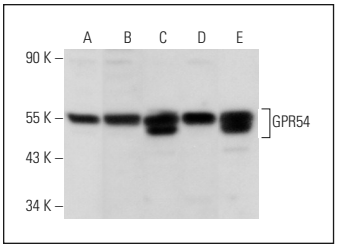
Molecular Weight of GPR54: 43 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or MIA PaCa-2 cell lysate: sc-2285.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



GPR54 (N-20): sc-48220. Western blot analysis of GPR54 expression in HeLa (**A**), MCF7 (**B**), MIA PaCa-2 (**C**), PANC-1 (**D**) and MDA-MB-231 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Pinto, F.M., et al. 2012. Characterization of the kisspeptin system in human spermatozoa. Int. J. Androl. 35: 63-73.
2. Cejudo Roman, A., et al. 2012. Analysis of the expression of neurokinin B, kisspeptin, and their cognate receptors NK3R and KISS1R in the human female genital tract. Fertil. Steril. 97: 1213-1219.
3. Ji, K., et al. 2014. Implication of metastasis suppressor gene, Kiss-1 and its receptor Kiss-1R in colorectal cancer. BMC Cancer 14: 723.

RESEARCH USE

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