SANTA CRUZ BIOTECHNOLOGY, INC.

GPB5 (P-20): sc-51295

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glycoprotein hormone β-5 subunit (GPB5) is a cystine knot-forming polypeptide found primarily in the brain and pituitary with low levels expressed in the retina, testis and skin. GPB5 glycoprotein can form a heterodimer with the α subunit, GPA2, both of which are members of the glycoprotein hormone family. Together with GPA2, GPB5 functions to stimulate the thyroid by activating the THSR (thyroid-stimulating hormone receptor), thereby increasing cAMP production. Overexpression of GPHB5 is thought to cause reductions in body weight, proptosis and an elevated T4 cell count.

REFERENCES

1. Nakabayashi, K., Matsumi, H., Bhalla, A., Bae, J., Mosselman, S., Hsu, S.Y. and Hsueh, A.J. 2002. Thyrostimulin, a heterodimer of two new human glycoprotein hormone subunits, activates the thyroid-stimulating hormone receptor. J. Clin. Invest. 109: 1445-1452.
2. Hsu, S.Y., Nakabayashi, K. and Bhalla, A. 2002. Evolution of glycoprotein hormone subunit genes in bilateral metazoa: identification of two novel human glycoprotein hormone subunit family genes, GPA2 and GPB5. Mol. Endocrinol. 16: 1538-1551.
3. Macdonald, L.E., Wortley, K.E., Gowen, L.C., Anderson, K.D., Murray, J.D., Poueymirou, W.T., Simmons, M.V., Barber, D., Valenzuela, D.M., Economides, A.N., Wiegand, S.J., Yancopoulos, G.D., Sleeman, M.W. and Murphy, A.J. 2005. Resistance to diet-induced obesity in mice globally overexpressing OGH/GPB5. Proc. Natl. Acad. Sci. USA 102: 2496-2501.
4. Park, J.I., Semyonov, J., Chang, C.L. and Hsu, S.Y. 2005. Conservation of the heterodimeric glycoprotein hormone subunit family proteins and the LGR signaling system from nematodes to humans. Endocrine 26: 267-276.
5. Sudo, S., Kuwabara, Y., Park, J.I., Hsu, S.Y. and Hsueh, A.J. 2005. Heterodimeric fly glycoprotein hormone α-2 (GPA2) and glycoprotein hormone β-5 (GPB5) activate fly leucine-rich repeat-containing G protein-coupled receptor-1 (DLGR1) and stimulation of human thyrotropin. Endocrinology 146: 3596-3604.
6. Okada, S.L., Okada, S.L., Ellsworth, J.L., Durnam, D.M., Haugen, H.S., Holloway, J.L., Kelley, M.L., Lewis, K.E., Ren, H., Sheppard, P.O., Storey, H.M., Waggie, K.S., Wolf, A.C., Yao, L.Y. and Webster, P.J. 2006. A glycoprotein hormone expressed in corticotrophs exhibits unique binding properties on thyroid-stimulating hormone receptor. Mol. Endocrinol. 20: 414-425.

CHROMOSOMAL LOCATION

Genetic locus: GPHB5 (human) mapping to 14q23.2; Gphb5 (mouse) mapping to 12 C3.

SOURCE

GPB5 (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GPB5 of human origin.

STORAGE

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

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-51295 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GPB5 (P-20) is recommended for detection of GPB5 precursor and mature Thyrostimulin β subunit 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).

GPB5 (P-20) is also recommended for detection of GPB5 precursor and mature Thyrostimulin β subunit in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GPB5 siRNA (h): sc-72242, GPB5 siRNA (m): sc-72243, GPB5 shRNA Plasmid (h): sc-72242-SH, GPB5 shRNA Plasmid (m): sc-72243-SH, GPB5 shRNA (h) Lentiviral Particles: sc-72242-V and GPB5 shRNA (m) Lentiviral Particles: sc-72243-V.

Molecular Weight of GPB5: 16 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.

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.