SANTA CRUZ BIOTECHNOLOGY, INC.

GH (GH-45): sc-51602

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pituitary growth hormone (GH, also designated somatotropin) plays a crucial role in stimulating and controlling the growth, metabolism and differentiation of many mammalian cell types by modulating the synthesis of multiple mRNA species. These effects are mediated by the binding of GH to its membrane-bound receptor, GHR, and involve a phosphorylation cascade that results in the modulation of numerous signaling pathways. GH is secreted in a pulsatile pattern which is tightly controlled by the interplay of GH-releasing hormone (GHRH) and somatostatin (SRIF). GHRH and SRIF are the primary hypothalamic factors that determine GH secretion from the somatotroph and regulate GH synthesis and secretory reserve. GH output is also highly sensitive to feedback control by GH itself, as well as by Insulin-like growth factor I. GH is synthesized by acidophilic or somatotropic cells of the anterior pituitary gland. Human growth hormone contains 191 amino acid residues with two disulfide bridges.

REFERENCES

1. Niall, H.D., et al. 1971. Sequence of pituitary and placental lactogenic and growth hormones: evolution from a primordial peptide by gene reduplication. Proc. Nat. Acad. Sci. USA 68: 866-870.
2. Harper, M.E., et al. 1982. Chromosomal localization of the human placental lactogen-growth hormone gene cluster to 17q22-24. Am. J. Hum. Genet. 34: 227-234.
3. Jellinck, P.H., et al. 1985. Normal and recombinant human growth hormone administered by constant infusion feminize catechol estrogen formation by rat liver microsomes. Endocrinology 117: 2274-2278.
4. Campbell, R.M., et al. 1992. Evolution of the growth hormone-releasing factor (GRF) family of peptides. Growth Regul. 2: 175-191.
5. Amit, T., et al. 1999. The human growth hormone (GH) receptor and its truncated isoform: sulfhydryl group inactivation in the study of receptor internalization and GH-binding protein generation. Endocrinology 140: 266-272.
6. Lincoln, D.T., et al. 2000. Growth hormone and colorectal carcinoma: localization of receptors. In Vivo 14: 41-49.
7. Robinson, I.C. 2000. Control of growth hormone (GH) release by GH secretagogues. Novartis Found. Symp. 227: 206-224.
8. Baou, N., et al. 2000. Evidence for a selective loss of somatostatin receptor subtype expression in male germ cell tumors of seminoma type. Carcinogenesis 21: 805-810.

CHROMOSOMAL LOCATION

Genetic locus: GH1/GH2 (human) mapping to 17q23.3.

SOURCE

GH (GH-45) is a mouse monoclonal antibody raised against human growth hormone.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

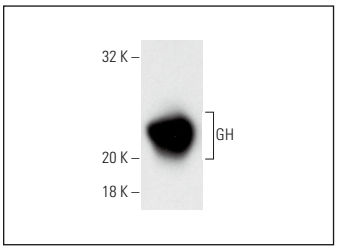
APPLICATIONS

GH (GH-45) is recommended for detection of GH 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of GH: 20 kDa.

Positive Controls: human pituitary tissue extract or JAR cell lysate: sc-2276.

DATA



GH (GH-45): sc-51602. Western blot analysis of GH expression in human pituitary tissue extract.

SELECT PRODUCT CITATIONS

1. Mathioudakis, N., et al. 2015. Expression of the pituitary stem/progenitor marker GFRα2 in human pituitary adenomas and normal pituitary. Pituitary 18: 31-41.
2. Rotondi, S., et al. 2016. Expression of peroxisome proliferator-activated receptor α (PPARα) in somatotropinomas: relationship with aryl hydrocarbon receptor interacting protein (AIP) and *in vitro* effects of fenofibrate in GH3 cells. Mol. Cell. Endocrinol. 426: 61-72.
3. Eid, W., et al. 2019. The human Exonuclease-1 interactome and phosphorylation sites. Biochem. Biophys. Res. Commun. 514: 567-573.
4. Capaci, V., et al. 2024. Inherited thrombocytopenia related genes: GPS2 mediates the interplay between ANKRD26 and ETV6. Cells 14: 23.
5. Kavinda, M.H.D., et al. 2024. 2,4'-dihydroxybenzophenone exerts bone formation and antiosteoporotic activity by stimulating the β-catenin signaling pathway. ACS Pharmacol. Transl. Sci. 7: 395-405.

STORAGE

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