

GH (C-3): sc-166696

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 somatotrophic 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. Natl. Acad. Sci. USA* 68: 866-869.
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.

CHROMOSOMAL LOCATION

Genetic locus: GH1/GH2/CSH1/CSH2 (human) mapping to 17q23.3; Gh (mouse) mapping to 11 E1.

SOURCE

GH (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 40-75 near the N-terminus of GH of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GH (C-3) is available conjugated to agarose (sc-166696 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166696 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166696 PE), fluorescein (sc-166696 FITC), Alexa Fluor[®] 488 (sc-166696 AF488), Alexa Fluor[®] 546 (sc-166696 AF546), Alexa Fluor[®] 594 (sc-166696 AF594) or Alexa Fluor[®] 647 (sc-166696 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-166696 AF680) or Alexa Fluor[®] 790 (sc-166696 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166696 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

GH (C-3) is recommended for detection of GH-1, GH-2 and Lactogen (chorionic somatomammotropin) of human origin, and GH of mouse and rat origin by Western Blotting (starting dilution 1:100, 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 GH siRNA (m): sc-43804, GH shRNA Plasmid (m): sc-43804-SH and GH shRNA (m) Lentiviral Particles: sc-43804-V.

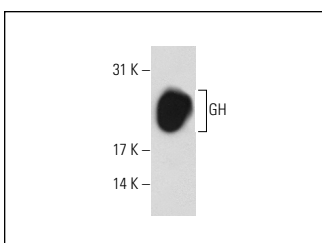
Molecular Weight of GH: 20 kDa.

Positive Controls: AtT-20/D16vF2 whole cell lysate: sc-364367, human placenta extract: sc-363772 or mouse brain extract: sc-2253.

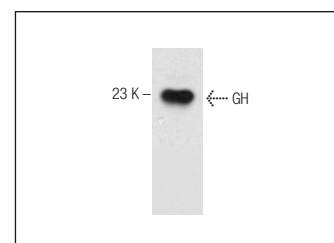
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



GH (C-3): sc-166696. Western blot analysis of sc-4621 recombinant GH.



GH (C-3): sc-166696. Western blot analysis of GH expression in human placenta tissue extract.

SELECT PRODUCT CITATIONS

1. Garcia, E.A., et al. 2013. Characterization of SNARE proteins in human pituitary adenomas: targeted secretion inhibitors as a new strategy for the treatment of acromegaly? *J. Clin. Endocrinol. Metab.* 98: E1918-E1926.
2. Mao, J., et al. 2019. Interleukin-1α leads to growth hormone deficiency in adamantinomatous craniopharyngioma by targeting pericytes: implication in pituitary fibrosis. *Metab. Clin. Exp.* 101: 153998.

STORAGE

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