### SANTA CRUZ BIOTECHNOLOGY, INC.

# 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 somatotropic cells of the anterior pituitary gland. Human growth hormone contains 191 amino acid residues with two disulfide bridges.

## REFERENCES

- 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: 866-870.
- 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.
- 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.

#### **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  $\mu g$   $lgG_{2a}$  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  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166696 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166696 PE), fluorescein (sc-166696 FITC), Alexa Fluor<sup>®</sup> 488 (sc-166696 AF488), Alexa Fluor<sup>®</sup> 546 (sc-166696 AF546), Alexa Fluor<sup>®</sup> 594 (sc-166696 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-166696 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-166696 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-166696 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

#### APPLICATIONS

GH (C-3) is recommended for detection of GH-1, GH-2 and Lactogen (chorionic somatommamotropin) of human origin, and GH of mouse and rat origin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

### DATA





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

GH (C-3): sc-166696. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells. Blocked with 0.25X UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detected with m-IgG Fc BP-B: sc-533652 and ImmunoCruz<sup>®</sup> ABC Kit: sc-516216.

#### SELECT PRODUCT CITATIONS

- 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- $1\alpha$  leads to growth hormone deficiency in adamantinomatous craniopharyngioma by targeting pericytes: implication in pituitary fibrosis. Metab. Clin. Exp. 101: 153998.
- Kanie, K., et al. 2021. Mechanistic insights into immune checkpoint inhibitor-related hypophysitis: a form of paraneoplastic syndrome. Cancer Immunol. Immunother. 70: 3669-3677.

#### **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.

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