Human Growth Hormone Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1067

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Growth Hormone in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 30% cross-reactivity with recombinant rat Growth Hormone is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human Growth Hormone Phe27-Phe217 Accession # CAA23779
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

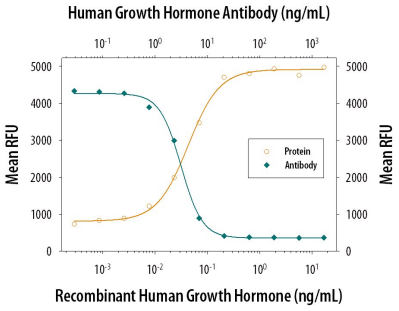
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human Growth Hormone (Catalog # 1067-GH)
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize Growth Hormone-induced proliferation in the Nb2-11 rat lymphoma cell line. Gout, P.W. et al. (1980) Cancer Res. **40**:2433. The Neutralization Dose (ND_{50}) is typically 1.5-7.5 ng/mL in the presence of 0.2 ng/mL Recombinant Human Growth Hormone.	

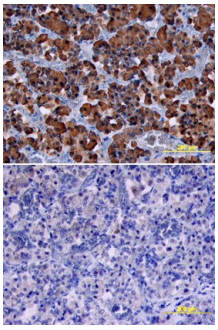
DATA

Neutralization



Cell Proliferation Induced by Growth Hormone and Neutralization by Human Growth Hormone Antibody. Recombinant Human Growth Hormone (Catalog # 1067-GH) stimulates proliferation in the Nb2-11 rat lymphoma cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human Growth Hormone (0.2 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human Growth Hormone Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1067). The ND_{50} is typically 1.5-7.5 ng/mL.

Immunohistochemistry



Growth Hormone in Human Pituitary. Growth Hormone was detected in immersion fixed paraffin-embedded sections of human pituitary using Goat Anti-Human Growth Hormone Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1067) at 10 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Growth Hormone (GH), also known as somatotropin, is a member of a family of growth factors that includes prolactin, placental lactogens, proliferins, and somatolactin (1, 2). It is synthesized primarily by somatotropes in the anterior pituitary and is stored in secretary granules. The pulsatile release of GH into circulation is regulated by the concerted actions of the hypothalamic hormones - GH-releasing hormone (GHRH) and somatostatin (SST) - as well as by signals from the periphery - ghrelin (3) and leptin (4). The human GH cDNA encodes a 217 amino acid (aa) residue precursor protein with a 26 aa putative signal peptide. By alternative splicing, at least four isoforms of GH have been identified (5).

Human GH is a pleiotropic cytokine that exerts its biological actions by binding to the transmembrane GH receptor, which is present in many cell types (1, 2). GH stimulates the liver and other tissues to produce IGF-I, which regulates growth and metabolism. GH has also been shown to have direct effects on growth that is independent of IGF-I. GH, directly or indirectly via IGF-I, can act on B cells, T cells, NK cells, macrophages, and neutrophils to exert immunomodulatory activities (6). In addition, GH can act directly on various cell types to induce lipolysis, lactation, amino acid uptake, and protein synthesis (1, 2, 6).

References:

1. Goffin, V. *et al.* (1996) Endocrine Rev. **17**:385.
2. Le Roith, D. *et al.* (2001) Endocrine Rev., **22**:53.
3. Kojima, K. *et al.* (1999) Nature, **402**:656.
4. Tannenbaum, G. *et al.* (1998) Endocrinol. **139**:3871.
5. Welniak, L.A. *et al.* (2002) J. Leukoc. Biol. **71**:381.