

**DESCRIPTION**

<b>Source</b>	Mouse myeloma cell line, NS0-derived		
	Human GHR (Ala27-Tyr264) Accession # P10912	IEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)
	N-terminus		C-terminus

<b>N-terminal Sequence Analysis</b>	Ala27
<b>Structure / Form</b>	Disulfide-linked homodimer
<b>Predicted Molecular Mass</b>	54 kDa (monomer)

**SPECIFICATIONS**

<b>SDS-PAGE</b>	75-90 kDa, reducing conditions
<b>Activity</b>	Measured by its ability to inhibit GH-induced proliferation of Nb2-11 rat lymphoma cells. Gout, P.W. <i>et al.</i> (1980) <i>Cancer Res.</i> <b>40</b> :2433. The ED <sub>50</sub> for this effect is 0.4-2.0 ng/mL in the presence of 0.2 ng/mL of rhGH.
<b>Endotoxin Level</b>	<0.01 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 µg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Growth hormone (GH), also known as somatotropin, is a member of a family of growth factors that includes prolactin, placental lactogens, proliferins and somatotactin (1, 2). It is synthesized primarily by somatotropes in the anterior pituitary and is released as an endocrine hormone. Other cells and tissues, including lymphoid tissues, can also produce GH (3). GH is a pleiotropic molecule which can act directly or indirectly via IGF-I, to regulate growth and metabolism as well as enhance T cell survival and thymic functions (1, 2, 4). GH exerts its biological actions by binding to the GH receptor (GHR) that is present in many cell types (1, 2). Human GHR cDNA encodes a 638 amino acid (aa) residue type I transmembrane protein with an 18 aa putative signal peptide, a 246 aa extracellular domain, a 24 aa transmembrane domain and a 350 aa cytoplasmic domain (5). At least two alternatively spliced isoforms of human GHR, lacking the sequence encoded by exon 3, or lacking most of the cytoplasmic domain, also exist (6, 7). Soluble GH-binding proteins corresponding to extracellular domain of the transmembrane proteins can be generated from the membrane proteins (8). Ligand of GHR by GH has been shown to result in receptor dimerization and activation of the JAK/STAT signaling cascade (9). The soluble GHBP has been shown to interfere with GH signaling by competing with the transmembrane receptor of GH. Alternatively, the GHBP has also been shown to enhance GH action by slowing GH clearance (8, 10).

**References:**

1. Goffin, V. *et al.* (1996) *Endocrine Rev.* **17**:385.
2. Le Roith, D. *et al.* (2001) *Endocrine Rev.* **22**:53.
3. Clark, R. (1997) *Endocr. Rev.* **18**:157.
4. Welniak, L.A. *et al.* (2002) *J. Leukoc. Biol.* **71**:381.
5. Leung, D.W. *et al.* (1987) *Nature* **330**:537.
6. Stallings-Mann, J.L. *et al.* (1996) *Proc. Nat. Acad. Sci.* **93**:12394.
7. Amit, T. *et al.* (1997) *Endocr. Metab.* **82**:3813.
8. Ross, R.J.M., *et al.* (1997) *Molecular Endocrinology* **11**:265.
9. Carter-Su, C. *et al.* (1996) *Annu. Rev. Physiol.* **58**:187.
10. Postel-Vinay, M.C. and J. Finidori (1995) *Eur. J. Endocrinol.* **133**:654.