

Recombinant Human Insulin-like Growth factor-1 GMP

Information

Gene ID	3479
Accession #	P05019
Alternate Names	Somatomedin C, IGF-I, IGF-IA
Source	Escherichia coli.
M.Wt	Approximately 7.6 kDa, a single non-glycosylated polypeptide chain containing 70 amino acids.
AA Sequence	GPETLCGAEL VDALQFVCGD RGFYFNKPTG YGSSSRAPQ TGIVDECCFR SCDLRRLEMY CAPLKPAKSA
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles A minimum of 12 months when stored at $\leq -20^{\circ}\text{C}$ as supplied Refer to lot specific COA for the Use by Date 1 month, 2 to 8°C under sterile conditions after reconstitution 3 months, -20 to -70°C under sterile conditions after reconstitution
Formulation	Lyophilized from a $0.2\ \mu\text{m}$ filtered concentrated solution in PBS, pH 7.0.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $\leq -20^{\circ}\text{C}$. Further dilutions should be made in appropriate buffered solutions.
Biological Activity	Fully biologically active when compared to standard. The ED as determined by a cell proliferation assay using serum free human MCF-7 cells is less than 2 ng/ml, corresponding to a specific activity of $> 5.0 \times 10\ \text{IU/mg}$.
Shipping Condition	Gel pack.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Components and Storage

Components	5 μg	100 μg	
Recombinant Human Insulin-like Growth factor-1 GMP	5 μg	100 μg	

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3 months, -20 to -70°C under sterile conditions after reconstitution

Quality Control

Purity	> 98 % by SDS-PAGE and HPLC analyses.
Endotoxin	Less than 0.01 EU/ μg of rHuIGF-1 GMP as determined by LAL method.

Description

The insulin-like growth factors (IGFs) belonged to the insulin gene family, are mitogenic polypeptide growth factors that stimulate the proliferation and survival of various cell types including muscle, bone, and cartilage tissue in vitro. The IGFs are similar by structure and function to insulin, but have a much higher growth-promoting activity than insulin. IGF-1 is produced primarily by the liver as an endocrine hormone as well as in target tissues in a paracrine/autocrine fashion. The production of IGF-1 is stimulated by growth hormone (GH) and can be retarded by undernutrition, growth hormone insensitivity, lack of growth hormone receptors, or failures of the downstream signaling pathway post GH receptor including SHP2 and STAT5B. Recombinant human IGF-1 are globular proteins containing 70 amino acids and 3 intra-molecular disulfide bonds. Mature human IGF-1 shares 94 % and 96 % a.a. sequence identity with mouse and rat IGF-1, respectively, and exhibits cross-species activity.

Reference

1. Skottner A, Fryklund L, Hansson HA. 1986. Acta Paediatr Scand Suppl, 325: 107-11
2. Bartlett WP, Li XS, Williams M. 1992. Brain Res Mol Brain Res, 12: 285-91
3. Palmade F, Sechoy-Chambon O, Coquelet C, et al. 1994. Curr Eye Res, 13: 531-7
4. Tennagels N, Hube-Magg C, Wirth A, et al. 1999. Biochem Biophys Res Commun, 260: 724-8
5. Laron Z. 2004. Novartis Found Symp, 262: 56-77; discussion -83, 265-8
6. Shiratsuchi I, Akagi Y, Kawahara A, et al. 2011. Anticancer Res, 31: 2541-5.



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