

DESCRIPTION

Source	<i>E. coli</i> -derived human IGF-I/IGF-1 protein Gly49-Ala118 Accession # P05019
N-terminal Sequence Analysis	Gly49
Predicted Molecular Mass	7.6 kDa

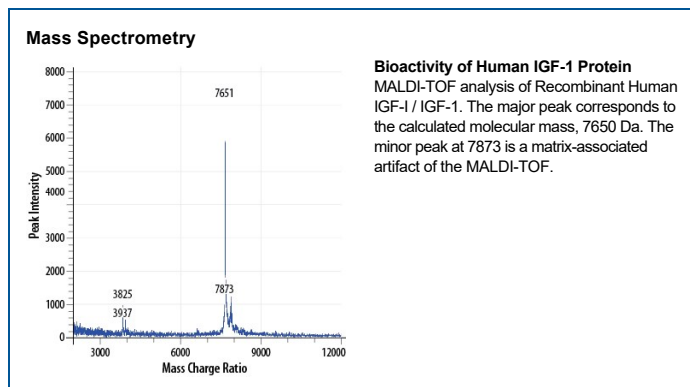
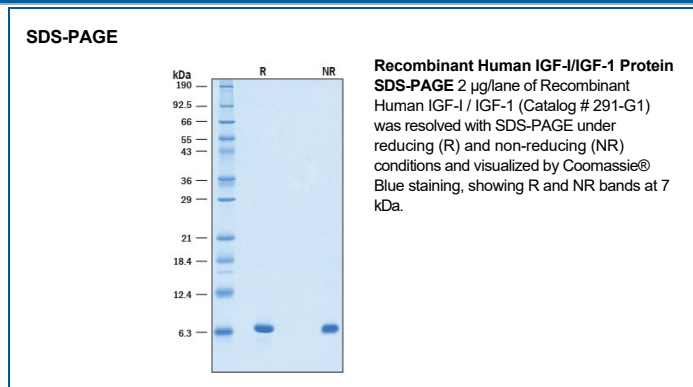
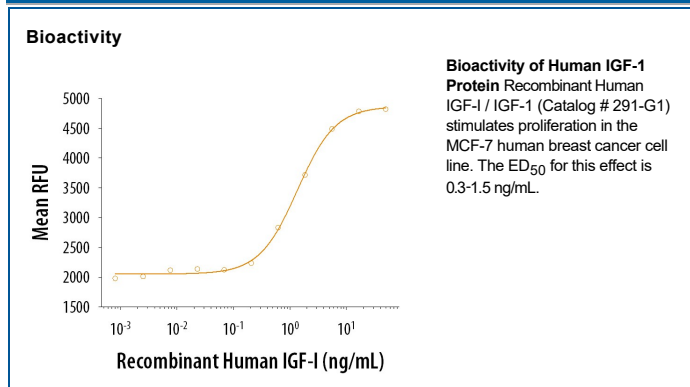
SPECIFICATIONS

SDS-PAGE	7 kDa, reducing conditions
Activity	Measured in a serum-free cell proliferation assay using MCF-7 human breast cancer cells. Karey, K.P. <i>et al.</i> (1988) <i>Cancer Research</i> 48:4083. The ED ₅₀ for this effect is 0.3-1.5 ng/mL. The specific activity of recombinant human IGF-I/IGF-1 is approximately 2.5 IU/μg, which is calibrated against recombinant human IGF-I/IGF-1 WHO International Standard (NIBSC code: 91/554). Specific activity is for reference purposes only and is not routinely tested.
Endotoxin Level	<0.10 EU per 1 μg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 μg/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. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

Insulin-like growth factor I (IGF-I or IGF-1), also known as somatomedin C, is the dominant effector of growth hormone and is structurally homologous to proinsulin. Human IGF-1 is synthesized as two precursor isoforms with N- and alternate C-terminal propeptides (1). These isoforms are differentially expressed by various tissues (1). The 7.6 kDa mature IGF-1 protein is identical between isoforms and is generated by proteolytic removal of the N- and C-terminal regions. Mature human IGF-1 shares 94% and 96% aa sequence identity with mouse and rat IGF-1, respectively (2), and exhibits cross-species activity. It shares 64% aa sequence identity with mature human IGF-II/IGF-2. Circulating IGF-I is produced by hepatocytes, while local IGF-I is produced by many other tissues in which it has paracrine effects (1). IGF-I induces the proliferation, migration, and differentiation of a wide variety of cell types during development and postnatally (3). IGF-I regulates glucose and fatty acid metabolism, steroid hormone activity, and cartilage and bone metabolism (4-7). It plays an important role in muscle regeneration and tumor progression (1, 8). IGF-I/IGF-1 binds IGF-I R, IGF-II R, and the insulin receptor, although its effects are mediated primarily by IGF-I R (9). The IGF-I protein associates with IGF binding proteins thereby increasing its plasma half-life and modulating its interactions with receptors (10).

References:

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