**INSULIN-LIKE GROWTH FACTOR I (IGF-I)**

*Mouse, Recombinant*
*Expressed in* *E. coli*

**Product Number** I 8779

**Product Description**
Recombinant Mouse Insulin-like Growth Factor I (IGF-I) is produced from a DNA sequence encoding the mature IGF-I protein.\(^1\) Mouse IGF-I, a 70 amino acid protein cross-linked by three disulfide bridges, has a predicted molecular mass of approximately 7.6 kDa. Mouse and human IGF-I share 97% sequence identity.

Insulin-like growth factor I (also known as somatomedin C and somatomedin A) and insulin-like growth factor II (IGF-II) belong to the family of insulin-like growth factors which are structurally homologous to proinsulin. Mature IGF-I and IGF-II are highly conserved and share approximately 70% amino acid sequence identity. They have autocrine, paracrine, and endocrine functions.

IGF-I mediates the growth-promoting activities of growth hormone postnatally. It also plays a role in embryonic growth and differentiation. IGF-I controls cell proliferation and differentiation by regulating specific events in G1 phase of cell cycle. It also stimulates myoblast differentiation and myotubal formation\(^2\) and has insulin-like effects, such as stimulation of glucose consumption in adipose tissue. IGF-I exerts its actions through the IGF-I receptor.

IGF-I and IGF II are expressed in many tissues and cell types. IGF-I is mitogenic for a variety of cells including fibroblasts, osteoblasts, smooth muscle cells, fetal brain cells, neuroglial cells, and erythroid progenitor cells.\(^2\)

**Reagent**
Recombinant Mouse Insulin-like Growth Factor I is supplied as approximately 50 \(\mu\)g of protein lyophilized from a 0.2 \(\mu\)m filtered solution in phosphate buffered saline (PBS).

**Preparation Instructions**
Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 25 \(\mu\)g/ml.

**Storage/Stability**
Store at \(-20^\circ\text{C}\). Upon reconstitution, store at 2 \(\text{C}\) to 8 \(\text{C}\) for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

**Product Profile**
Recombinant Mouse Insulin-like Growth Factor I (IGF-I) is measured in a serum-free cell proliferation assay using the human breast carcinoma cell line MCF-7 cells.\(^3\)

The ED\(_{50}\) for this effect is typically 1.0 to 3.0 ng/ml.

The ED\(_{50}\) is defined as the effective concentration of growth factor that elicits a 50 % increase in cell growth in a cell based bioassay.

Purity: > 97 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/\(\mu\)g protein as determined by the LAL (Limulus amebocyte lysate) method.

**References**