Product No. I-3144
Insulin-like Growth Factor-II
Human, Recombinant
Expressed in *E. coli*

Product Description

Insulin-like Growth Factor-II (IGF-II) was first isolated from human serum by Froesch, et al.,[1] as a factor displaying insulin-like activities that were not suppressed by antibodies to insulin. It had been discovered that growth hormone-dependent factors in serum stimulate the in corporation of ^{35}S into cartilage[2] and that calf serum factors induced cellular division in chick fibroblasts.[3] In 1972, the term "somatomedin" was introduced in an unsuccessful attempt to unify the nomenclature of these hormone-dependent factors.[4] In 1987, a consensus among an international group of scientists endorsed the use of the terms insulin-like growth factors (IGF-I and IGF-II),[5] originally proposed by Rinderknecht and Humbel.[6] Hence, IGF-I and IGF-II have had several synomyms: nonsuppressible insulin-like activity (NSILA), sulfation factor activity (SFA), and multiplication stimulating activity (MSA). Because IGF-II was not regulated by growth hormone, only IGF-I was known as a somatomedin.

Human IGF-II contains 67 amino acids and shares similar structural features with IGF-I, including a 62% sequence homology.[7] In human plasma, IGF-I and IGF-II are associated with IGF-binding proteins[8,9] that transport the polypeptides and partially regulate their actions *in vivo*.[10] In addition to the insulin receptor, IGF-II binds to two forms of IGF receptors, both of which are widely distributed in different tissues and cultured cells.[11] IGF-II is mitogenic for a variety of cultured cells, including mouse 3T3 cells, [12] normal rat kidney cells,[13] human or chicken fibroblasts,[14,15] and MCF-7 human breast carcinoma cells.[16]

Performance Characteristics

The mitogenic activity of IGF-II was measured by serum-free cell proliferation assay using the bovine kidney cell line MDBK. The EC_{50} is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Product Information

Expressed in *E. coli*
Molecular Weight: 7.5 kD
Purity: ≥97% by SDS-PAGE and N-terminal analysis
EC_{50}: 5 - 20 ng/ml
Package Size: 50 µg

Formulation: Lyophilized from a 0.2 µm-filtered solution of 10 mM acetic acid, pH 3.4.
Carrier Protein: 2.5 mg bovine serum albumin (BSA)
Sterility: 0.2 µm-filtered, aseptic fill
Endotoxin: ≤0.1 ng/µg IGF-II

Reconstitution and Use

Reconstitute the contents of the vial using 0.2 µm-filtered 10 mM acetic acid containing 0.1% HSA or BSA to not less than 10 µg/ml. This may be diluted immediately before use in sterile-filtered PBS containing 0.1% - 1.0% BSA.

Storage

Prior to reconstitution store vial at −20°C. After reconstitution, freeze in working aliquots at −20°C for no longer than 6 months. Prolonged storage and repeated freezing and thawing is **not** recommended.

References

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