Human Insulin-like Growth Factor II (hIGF-II)

**Background:** IGF-II is a potent cellular mitogen that is closely related to IGF-I (1). IGF-II is primarily produced by the liver and is frequently overexpressed in tumors (1,2). IGF-II binds to the IGF-IR, activating the AKT, mTOR, ERK, and JNK pathways (1). IGF-II signaling is regulated by several distinct mechanisms. First, IGF binding proteins (IGFBPs) bind to IGF-II and block interactions with the IGF-IR (1-3). Second, the IGF-IR binds to and acts as a molecular trap for IGF-II (1-3). Lastly, the IGF2 gene is an imprinted gene, and loss of imprinting leads to increased IGF-II levels (1-3). Aberrant levels of IGF-II are associated with Wilms tumor, Beckwith-Wiedmann syndrome, and colorectal cancer (1,2).

**Background References:**

**Source/Purification:** Recombinant human IGF-II was expressed in E. coli and is supplied in a lyophilized form. A greater than 95% purity was determined by SDS-PAGE. Endotoxin levels are less than or equal to 1 EU / 1 μg hIGF-II.

**Directions For Use:** Working concentration of hIGF-II generally ranges from 1-100 ng/ml.

**Activity:** The bioactivity of recombinant hIGF-II was determined in a cell proliferation assay using FDC-P1 cells. The ED₅₀ of each lot is between 10-20 ng/ml.

**Storage:** Recombinant human IGF-II is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/ml which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long term storage.

Western blot analysis of extracts from NIH/3T3 cells untreated or treated with hIGF-II for 10 minutes, using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb #4060 (upper) and Akt (pan) (C67E7) Rabbit mAb #4691 (lower).

**SourceMolecular Wt. Purity**

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<tr>
<th>Source</th>
<th>Human Recombinant Protein expressed in E. coli</th>
<th>Purity &gt; 95%</th>
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<tr>
<td>Molecular Wt.</td>
<td>7 kDa</td>
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