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### 1. Description

<b>Products</b>	Human IGF-1, research grade. Recombinant human insulin-like growth factor 1.						
	<table border="1"> <thead> <tr> <th>Content in µg</th> <th>Order no.</th> </tr> </thead> <tbody> <tr> <td>1000</td> <td>130-138-936</td> </tr> <tr> <td>100</td> <td>130-138-933</td> </tr> </tbody> </table>	Content in µg	Order no.	1000	130-138-936	100	130-138-933
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1000	130-138-936						
100	130-138-933						
<b>Biological activity</b>	The ED <sub>50</sub> is ≤14 ng/mL corresponding to an activity of ≥7.1×10 <sup>5</sup> U/mg. ▲ <b>Note:</b> The ED <sub>50</sub> is determined by proliferation assay using MCF-7 cells.						
<b>Primary structure</b>	Single, non-glycosylated polypeptide chain (70 amino acid residues).						
<b>Molecular mass</b>	7.7 kDa (calculated).						
<b>Source</b>	Produced in HEK293 cells.						
<b>Product format</b>	Lyophilized from a filtered (0.2 µm) 50 mM acetic acid solution.						
<b>Stabilizer</b>	None.						
<b>Purity</b>	>95% as determined by SDS-PAGE analysis.						
<b>Endotoxin level</b>	Low endotoxin (<1 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.						
<b>Storage</b>	Lyophilized Human IGF-1, research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.						
<b>Reconstitution</b>	It is recommended to reconstitute lyophilized Human IGF-1, research grade with phosphate-buffered saline to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 20 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.						

#### 1.1 Background information

Insulin-like growth factor 1 (IGF-1), also known as somatomedin-C, is a protein that stimulates the proliferation and survival of various cell types *in vitro*, including muscle, bone and cartilage. It plays an important role in childhood growth and continues to have anabolic

effects in adults. IGF-1 belongs to the insulin-like growth factor family, binds to the IGF-1 receptor and activates the PI3K/AKT and ERK1/2 signaling pathways. It is mainly produced in the liver and, along with IL-3, stimulates the differentiation and proliferation of myeloid cells.

#### 1.2 Applications

Human IGF-1 can be used for a variety of applications including:

- Cell culture neurobiology.
- Differentiation and proliferation of myeloid cells.

Optimal concentration for a specific application should be determined by a dose-response experiment.

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