Heavy-Labeled MS Protein Standard for Bottom-Up Proteomics

Human IGF-1 (lys-$^{13}$C$_6$,$^{15}$N$_2$, 99%; arg-$^{13}$C$_6$,$^{15}$N$_4$, 99%)
Catalog No. CNLM-9513

**Significance**
IGF-1 is a hormone that is similar in structure to insulin. It plays a large role in childhood growth and also has anabolic effects on adults. A labeled version has been used as an internal standard for a mass spectrometry-based assay to test for doping.$^{1-3}$

**Product Description**
A 10 µg/mL solution of human IGF-1, with lysine residues labeled as $^{13}$C$_6$,$^{15}$N$_2$ (99%) and arginine residues labeled as $^{13}$C$_6$,$^{15}$N$_4$ (99%), in 20 mM sodium phosphate buffer, pH 7, containing 10 mg/mL trehalose.

**Product Specifications**

<table>
<thead>
<tr>
<th>Analytical Test</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC/MS for isotopic incorporation</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>SDS-PAGE for purity</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>AAA-MS for concentration</td>
<td>10 µg/mL</td>
</tr>
</tbody>
</table>

**Additional Information**

pH = 7  
Storage: Store at -80°C; avoid freeze-thaw cycles  
Stability: Retest after 1 year

Molecular weight (calculated):
IGF-1 (unlabeled) = 7649 Da  
IGF-1 (lys-$^{13}$C$_6$,$^{15}$N$_2$, 99%; arg-$^{13}$C$_6$,$^{15}$N$_4$, 99%) = 7733 Da

Source: E. coli

**Note:** This product contains two structures of labeled IGF-1 with different disulfide connectivities.$^{4,5}$

**Protein Sequence**

GPEPCGAELVALQDGCPRFYNKPTGYSRRAPQTGIV  
DECCFRSCLRLEMYCAPLKPAMSA  
(70 AA)

**References**