

---

**Certificate of Analysis**

---

Product Name: Deltorphin I  
Cat. No.: GC12143  
Batch No.: 1  
Chemical Name: (S)-4-(((S)-1-(((S)-1-((2-amino-2-oxoethyl)amino)-3-methyl-1-oxobutan-2-yl)amino)-3-methyl-1-oxobutan-2-yl)amino)-3-((S)-2-((R)-2-((S)-2-amino-3-(4-hydroxyphenyl)propanamido)propanamido)-3-phenylpropanamido)-4-oxobutanoic acid

**PHYSICAL AND CHEMICAL PROPERTIES**

Cas. No.: 122752-15-2  
Molecular Formula:  $C_{37}H_{52}N_8O_{10}$   
Molecular Weight: 768.87  
Storage: Store at  $-20^{\circ}C$   
Chemical Structure:

**ANALYTICAL DATA**

Appearance: solid  
HNMR: Consistent with structure  
HPLC: Consistent with structure  
Purity: >98%  
Conclusion: The product has been tested and complies with the given specifications.

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA