



# Certificate of analysis

Product name: Thymosin alpha 1

Cas number: 62304-98-7 (69440-99-9)

Molecular Formula: C<sub>129</sub>H<sub>215</sub>N<sub>33</sub>O<sub>55</sub>

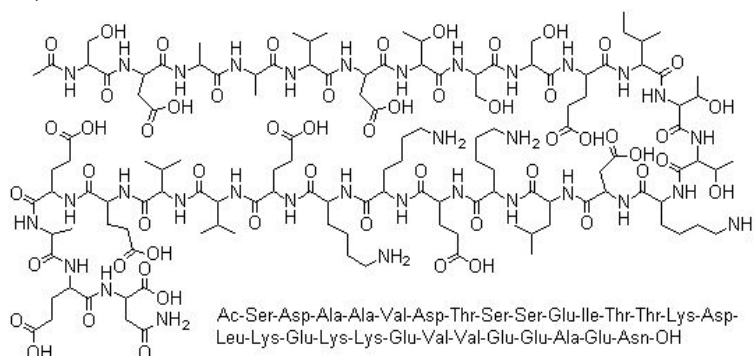
Molecular Weight: 3108.30

Date of production: Feb. 28, 2015

Batch NO: 20150228

EXP DATE: Feb. 27, 2017

Chemical structure:



Items	Specifications	Test results
Description	White to off-white powder	Conforms
Solubility	Meets the requirements	Conforms
Specific Rotation	-66.0° ~ -76.0°	-69.4°
Identification	MS	Conforms
Amino Acid Composition	Meets the requirements	Conforms
Alkalinity	5.0~7.0	6.05
Clarity and colour of solution	Clarify the colourless	Conforms
Acetic acid	5.0%~12.0%	9.7%
Water	≤10.0%	2.3%
Related substances	Single impurity ≤0.5%	0.1%
	Total impurities ≤ 1.0%	0.6%
Bacterial endotoxin	< 100EU/mg	Conforms
Assay	≥98%	100.7 %

**Conclusion: It complies with the Enterprise Standard.**

Analyst: Zhao

Checker: Liu

Q.C Director. Fang