



# Certificate of Analysis

## GM-CSF Protein, Human (HEK293, Tag Free)

Cat. No.:	HY-P78868
Batch No.:	316605
Species:	Human
Source:	HEK293
Tag:	Tag Free
Accession:	P04141 (A18-E144)
Gene ID:	1437
Molecular Weight:	Approximately 19-29 kDa due to the glycosylation

### ANALYTICAL DATA

TEST	Specifications	Results
Purity	Greater than 95% as determined by reducing SDS-PAGE.	≥98.0%
Endotoxin Level	<1 EU/μg, determined by LAL method.	PASS
Biological Activity	Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. The ED <sub>50</sub> for this effect is ≤ 1.731 ng/mL, corresponding to a specific activity is ≥ 5.777×10 <sup>5</sup> units/mg.	89.17 pg/mL
Appearance	Lyophilized powder	
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).	
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.	
Shipping	Room temperature in continental US; may vary elsewhere.	

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

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