

## CERTIFICATE OF ANALYSIS

### Product Information

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Product Name:	GM-CSF, Human(CHO-expressed)
Cat. No.:	Z02983-10; Z02983-50; Z02983-1
Lot No.:	B60131412
Size:	10 µg/vial; 50 µg/vial; 1 mg/vial
Storage Condition:	Lyophilized recombinant human Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF) remains stable up to 6 months at lower than -70°C from date of receipt. Upon reconstitution, hGM-CSF should be stable up to 1 week at 4°C or up to 2 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

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### Quality Control

Test Items	Specifications	Results
Physical Appearance	White Freeze - dried Powder	Conformed
Purity (SDS-PAGE&HPLC)	> 95%	Conformed
Biological Activity (ED <sub>50</sub> )	<0.2 ng/ml	Conformed
Molecular Weight	22-28 kDa	Conformed
Bacterial Endotoxin	< 0.2 EU/µg	Conformed

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### Caution:

For laboratory use only. Not for household use. If you have any questions about the Certificate of Analysis, please contact our customer service representative at 1-877-436-7274 (Toll-Free), or 1-732-885-9188.

Certified by: Joe Wang Date: 01/22/2015  
Protein Products Department