

## CERTIFICATE OF ANALYSIS

### Product Information

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Product Name: GM-CSF, Human (P. pastoris-expressed)

Cat. No.: Z02694-10; Z02694-50; Z02694-1

Lot No.: P50041605

Size: 10 µg/vial; 50 µg/vial; 1 mg/vial

Storage Condition: Lyophilized recombinant Human GM-CSF remains stable up to 12 months at lower than -70°C from date of receipt. Upon reconstitution, rhGM-CSF should be stable up to 4 week at 4°C or up to 6 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) can 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)	> 95%	96%
Biological Activity(ED <sub>50</sub> )	< 0.1 ng/ml	0.09 ng/ml
Molecular Weight	26-32 kDa	Conformed
Bacterial Endotoxin	< 0.2 EU/µg	0.1 EU/µg

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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: 09/02/2016  
Protein Products Department