

## PRODUCT INFORMATION

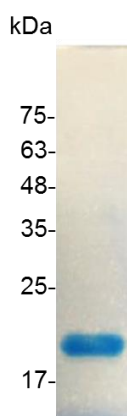
## Croyez GMP® GM-CSF (Granulocyte-macrophage colony-stimulating factor), Human

<b>Catalog number</b>	C01116-GMP-100 / C01116-GMP-1000
<b>Package</b>	100 µg / 1 mg
<b>Description</b>	Granulocyte-macrophage colony-stimulating factor (GM-CSF), also known as colony-stimulating factor 2 (CSF2), is a monomeric glycoprotein secreted by macrophages, T cells, mast cells, natural killer cells, endothelial cells and fibroblasts that functions as a cytokine. GM-CSF also plays a role in embryonic development by functioning as an embryokine produced by reproductive tract.
<b>Source</b>	<i>Escherichia coli</i> Animal-free reagent and laboratory Manufactured and tested under GMP guideline
<b>Sequence</b>	APARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEISEMFDLQEPTC LQTRLELYKQGLRGS�TKLKGPLTMMASHYKQHCPPTPETS CATQIITFESFKEN LKDFLLVIPDCWEPVQE with polyhistidine tag at the N-terminus
<b>Endotoxin level</b>	<0.1 EU per 1 µg of the protein by the LAL method.
<b>Activity</b>	Measure by its ability to induce TF-1 cells proliferation. The ED <sub>50</sub> for this effect is <80 pg/mL. The specific activity of recombinant human GM-CSF is approximately >1 x 10 <sup>7</sup> IU/mg.
<b>Purity</b>	>98% as determined by SDS-PAGE. Purified by Ni-NTA chromatography.
<b>Formulation</b>	The protein was lyophilized from a solution containing 1X PBS, pH 8.0.
<b>Reconstitution</b>	It is recommended to reconstitute the lyophilized protein in sterile H <sub>2</sub> O to a concentration not less than 100 µg/mL and incubate the stock solution for at least 20 min to ensure sufficient re-dissolved.
<b>Storage</b>	Lyophilized protein should be stored at -20°C. This product is stable for one year upon receipt, when handled and stored as instructed. Upon reconstitution, protein aliquots should be stored at -20°C or -80°C. Avoid repeated freeze/thaw cycles.
<b>Note</b>	Please use within one month after protein reconstitution.
<b>Specification</b>	Croyez GMP® recombinant proteins are manufactured in ISO 13485:2016 and GMP-certified facility. The processes include: <ul style="list-style-type: none"> <li>● Testing and traceability of raw material</li> </ul>

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- Records of the maintenance and equipment calibration
  - Personnel training records
  - Batch-to-batch consistency
  - Documentation of QA control and process changes
  - Manufactured and tested under an ISO 13485:2016 certified quality management system
  - Stability monitor of product shelf-life
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**Reference**

1. Becher B. et al. (2016) *Immunity*. 45,5: 963-973.
  2. Shi Y. et al. (2006) *Cell research*. 16,2: 126-33.
  3. Hamilton JA. (2015) *Expert Rev Clin Immunol*. 11,4: 457-65.
  4. Hamilton JA, Anderson GP. (2004) *Growth Factors*. 22,4: 225-31.
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SDS-PAGE analysis of Croyez GMP<sup>®</sup> GM-CSF, Human

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For Research Use Only. Not for use in diagnostic or therapeutic procedures.