


## Rat GM-CSF protein

Cat #: PRP1242

Size: 5ug/20ug/100ug/1mg

### Product Information

	<b>Product Name:</b> Rat GM-CSF protein		
<b>REF</b>	<b>Catalog Number:</b> PRP1242	<b>LOT</b>	<b>Lot Number:</b> Refer to product label
	<b>Purity:</b> > 99 % as determined by SDS-PAGE		
	<b>Storage:</b> Store at -20°C		<b>Preparation method:</b> <i>E. coli</i>
	<b>Shipping:</b> The product is shipped at ambient temperature.		

**Background:** Granulocyte-macrophage colony-stimulating factor (GM-CSF) is one of an array of cytokines with pivotal roles in embryo implantation and subsequent development. Several cell lineages in the reproductive tract and gestational tissues synthesise GM-CSF under direction by ovarian steroid hormones and signalling agents originating in male seminal fluid and the conceptus. The pre-implantation embryo, invading placental trophoblast cells and the abundant populations of leukocytes controlling maternal immune tolerance are all subject to GM-CSF regulation. GM-CSF stimulates the differentiation of hematopoietic progenitors to monocytes and neutrophils, and reduces the risk for febrile neutropenia in cancer patients. GM-CSF also has been shown to induce the differentiation of myeloid dendritic cells (DCs) that promote the development of T-helper type 1 (cellular) immune responses in cognate T cells. The active form of the protein is found extracellularly as a homodimer, and the encoding gene is localized to a related gene cluster at chromosome region 5q31 which is known to be associated with 5q-syndrome and acute myelogenous leukemia. As a part of the immune/inflammatory cascade, GM-CSF promotes Th1 biased immune response, angiogenesis, allergic inflammation, and the development of autoimmunity, and thus worthy of consideration for therapeutic target. GM-CSF has been utilized in the clinical management of multiple disease processes. Most recently, GM-CSF has been incorporated into the treatment of malignancies as a sole therapy, as well as a vaccine adjuvant. While the benefits of GM-CSF in this arena have been promising, recent reports have suggested the potential for GM-CSF to induce immune suppression and, thus, negatively impact outcomes in the management of cancer patients. GM-CSF deficiency in pregnancy adversely impacts fetal and placental development, as well as progeny viability and growth after birth, highlighting this cytokine as a central maternal determinant of pregnancy outcome with clinical relevance in human fertility.

**Sequence:** Amino acid sequence derived from Rat GM-CSF protein (P48750) (Ala18-Lys144) was expressed.

**Protein length:** The Recombinant Rat GM-CSF protein consists of 147 amino acids and predicts a molecular mass of 16.9KDa.

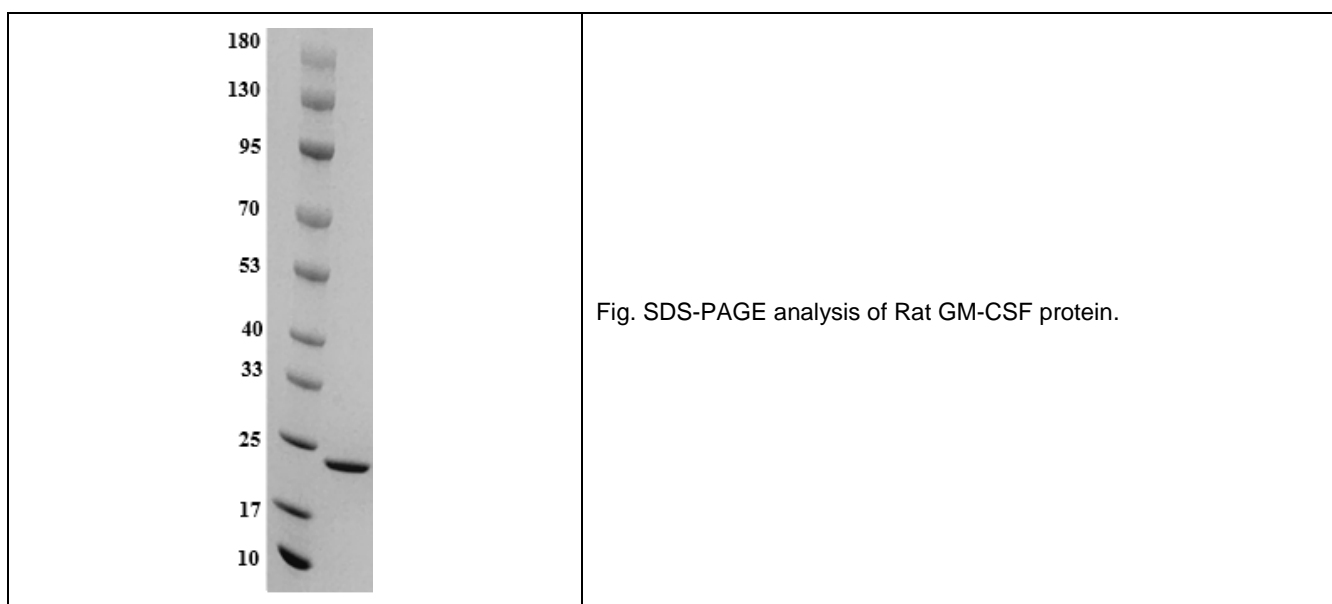
**Biological Activity:** Measured by its ability to induce proliferation in M-NFS-60 cells. The ED<sub>50</sub> for this effect is 1.069 ng/mL .

**Endotoxin:** < 1.0 EU per µg of the protein as determined by the LAL method.

**Formulation:** Lyophilized from sterile 20 mM Tris with 150 mM NaCl, pH 7.4.

**Storage Instructions:** Lyophilized Rat GM-CSF protein product should be stored desiccated below -20°C. Upon reconstitution, the protein should be stored at 4°C between 2-7 days and for future use below -20°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Usage notes:** Always centrifuge tubes before opening. It is recommended to reconstitute the lyophilized Rat GM-CSF protein using the buffer we provided not less than 100µg/ml, which can then be further diluted to other aqueous solutions.



**Note:** The product listed herein is for research use only and is not intended for use in human or clinical diagnosis. Suggested applications of our products are not recommendations to use our products in violation of any patent or as a license. We cannot be responsible for patent infringements or other violations that may occur with the use of this product.