

MacroCargo™ Human PBMC-derived Macrophages with GM-CSF (Viral System, Lentivirus)

Cat. No.: MTS-1122-YF297

This product is for research use only and is not intended for diagnostic use.

Cell Properties

Product Overview	As a therapeutic tool, macrophage cell has a great capacity for delivering cargos because of their intrinsic characteristics. This product is engineered Human PBMC-derived Macrophages carried with GM-CSF by Viral System-Lentivirus. MacroCargo™ products aim to improve the macrophage function and delivery of specific cargos. We also provide custom macrophage delivery systems based on your specific requirements.
Cell Name	PBMC-derived Macrophages
Cell Type	Primary Cell
Cell Species	Human
Cell Background	Macrophages are specialised cells involved in the detection, phagocytosis and destruction of bacteria and other harmful organisms. In addition, they can also present antigens to T cells and initiate inflammation by releasing molecules (known as cytokines) that activate other cells. Furthermore, macrophages are able to cross the biological barriers, penetrate into tumors, and accumulate particularly in hypoxic and poorly vascularized portions of a tumor.

Cargo Properties

Cargo Type	Cytokine
Specific Cargo	GM-CSF
Cargo Common Name	CSF2
Cargo Alternative Names	CSF; GMCSF
Cargo Full Name	Colony stimulating factor 2
Introduction	The protein encoded by this gene is a cytokine that controls the production, differentiation, and function of granulocytes and macrophages. The active form of the protein is found extracellularly as a homodimer. This gene has been localized to a cluster of related genes at chromosome region 5q31, which is known to be associated with interstitial deletions in the 5q- syndrome and acute myelogenous leukemia. Other genes in the cluster include those encoding interleukins 4, 5, and 13. This gene plays

a role in promoting tissue inflammation. Elevated levels of cytokines, including the one produced by this gene, have been detected in SARS-CoV-2 infected patients that develop acute respiratory distress syndrome. Mice deficient in this gene or its receptor develop pulmonary alveolar proteinosis.

UniprotID [P04141](#)

GeneID [1437](#)

Cargo Delivery System Type Viral System

Cargo Delivery Approach Lentivirus

Product Properties

Applications Shift in macrophage polarity towards the inflammatory M1 type

References Brom, Victoria C., et al. "The role of immune checkpoint molecules on macrophages in cancer, infection, and autoimmune pathologies." *Frontiers in Immunology* 13 (2022): 837645. Distributed under Open Access license [CC BY 4.0](#), without modification.

Mycoplasma Testing Negative

Sterility Testing Negative

Shipping Dry ice

Storage Frozen cells should be stored in a liquid nitrogen tank (-150°C~-190°C) for long term.

Handling Notes Frozen cells should be thawed immediately upon receipt and grown according to handling procedure to ensure cell viability and proper assay performance. Note: Do not freeze the cells upon receipt as it may result in irreversible damage to the cell line. Disclaimer: We cannot guarantee cell viability if the cells are not thawed immediately upon receipt and grown according to handling procedure.

Restriction Research use only