

MacroCargo™ Human PBMC-derived Monocytes with GDNF (Transfection System, GenePORTER 3000)

Cat. No.: MTS-1222-YF502

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 Monocytes carried with GDNF by Transfection System-GenePORTER 3000. 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 Monocytes
Cell Type	Primary Cell
Cell Species	Human
Cell Background	Monocytes express various receptors, which monitor and sense environmental changes. Monocytes are highly plastic and heterogeneous, and change their functional phenotype in response to environmental stimulation. Evidence from murine and human studies has suggested that monocytosis can be an indicator of various inflammatory diseases. Monocytes can differentiate into inflammatory or anti-inflammatory subsets. Upon tissue damage or infection, monocytes are rapidly recruited to the tissue, where they can differentiate into tissue macrophages or dendritic cells.

Cargo Properties

Cargo Type	Protein
Specific Cargo	GDNF
Cargo Common Name	GDNF
Cargo Alternative Names	ATF; ATF1; ATF2; HSCR3; HFB1-GDNF
Cargo Full Name	Glial cell derived neurotrophic factor
Introduction	This gene encodes a secreted ligand of the TGF-beta (transforming growth factor-beta) superfamily of proteins. Ligands of this family bind various TGF-beta receptors leading to recruitment and activation of SMAD family transcription factors that regulate gene expression. The encoded preproprotein is proteolytically processed to generate

erate each subunit of the disulfide-linked homodimer. The recombinant form of this protein, a highly conserved neurotrophic factor, was shown to promote the survival and differentiation of dopaminergic neurons in culture, and was able to prevent apoptosis of motor neurons induced by axotomy. This protein is a ligand for the product of the RET (rearranged during transfection) protooncogene. Mutations in this gene may be associated with Hirschsprung disease and Tourette syndrome. This gene encodes multiple protein isoforms that may undergo similar proteolytic processing.

UniprotID	P39905
GeneID	2668
Cargo Delivery System Type	Transfection System
Cargo Delivery Approach	GenePORTER 3000

Product Properties

Applications	Provide significant neuronal protection in Parkinson's disease
References	Zhao, Yuling, et al. "GDNF-transfected macrophages produce potent neuroprotective effects in Parkinson's disease mouse model." <i>PloS one</i> 9.9 (2014): e106867. Distributed under Public Domain .
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