

PPH13

PODS[®] MCP-1/CCL2

Description

The product contains the polyhedrin protein co-crystallized with Human MCP-1. MCP-1, also known as CCL2, is a member of the C-C or beta chemokine family that is best known as a chemotactic agent for mononuclear cells, such as monocytes and basophils, but not for neutrophils or eosinophils. Monocyte Chemotactic Protein 1 (MCP-1) is produced by injured or infected tissues. MCP-1 signals through the CCR2 and CCR4 G protein-coupled receptors to recruit memory T cells, monocytes, and dendritic cells to sites of inflammation.

Length	121 aa (45 aa H1 affinity tag (blue), 76 aa Human CCL2)
Molecular Weight	13.9 kDa
Source	<i>Spodoptera frugiperda (Sf9) cell culture</i>
Accession Number	NP_002973.1

Usage Recommendation

PODS[®] are pure protein co-crystals consisting of polyhedrin, a structural scaffold protein, and a cargo protein. Under the action of proteases, which degrade the scaffold protein, PODS provide sustained release of the cargo protein. Any cargo growth factor molecule contained within PODS is not available to cells and not bioactive.

The concentration to which a growth factor accumulates in cell culture media (or in-vivo environment) will depend on the amount of cargo (contained in PODS) added, the rate of cargo release, and the subsequent rate of degradation of the released cargo protein.

As a rule of thumb, in the presence of 10% serum, peak levels of available growth factors released from PODS are reached within 24-48 hours. Typically, at this point 20% of the growth factor cargo initially contained within the PODS is present in a soluble form and available to bind cells. For example, if PODS containing 100 ng of cargo are added to 10 mL of cell culture media containing 10% serum, it can be expected that 20 ng will be released after 24 hours to give a concentration of available growth factor of 2 ng/mL. The concentration that you need for a particular application will likely be lower than the equivalent conventional growth factor. This is because PODS are better at maintaining minimum growth factor concentrations. Pre incubating PODS with serum for 24 hours prior to culture will ensure that available growth factor is immediately present. Ultimately, the amount of PODS growth factor that is optimal for a particular experiment should be optimized empirically.

Specifications

Alternative Names	Monocyte Chemotactic Protein 1, CCL2, monocyte secretory protein JE, monocyte chemotactic and activating factor (MCAF)
Formulation	PODS [®] were lyophilized from a volatile solution
AA Sequence	MADVAGTSNR DFRGREQRLF NSEQYNYNNS KNSRPSTSLY KKAGFQPD AI NAPVTCCYNF TNRKISVQRL ASYRRITSSK CPKEAVIFKT IVAKEICADP KQKWVQDSMD HLDKQTQTPK T

Preparation and Storage

Reconstitution	PODS [®] co-crystals may be reconstituted at 200 million co-crystals/ml in sterile PBS. 20% glucose has a buoyant density closer to PODS [®] co-crystals and can be useful for aliquoting. PODS [®] co-crystals are highly stable when stored in aqueous solution (pH range 6 - 8).
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Stability and Storage Upon receipt, store at 4°C. PODS® co-crystals are stable for at least 1 year when dry and 6 months when resuspended.