DATASHEET

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PPH159 PODS® Human CXCL12b / SDF-1 β

Description

The product contains the polyhedrin protein co-crystalized with Human CXCL12b. CXCL12, C-X-C motif chemokine 12 (CXCL12), is also known as Stromal cell-derived factor 1 β (SDF1 β). CXCL12 acts as a chemoattractant active on monocytes and Tlymphocytes but not neutrophils. The binding of CXCL12 to CXC receptor 4 (CXCR4) induces intracellular signalling through several divergent pathways which are implicated in chemotaxis, increase in intracellular calcium, cell survival and/or proliferation, and gene transcription. CXCL12 has diverse cellular functions including embryogenesis, tissue homeostasis, immune surveillance, inflammation, and tumour growth and metastasis. During embryogenesis, it is required for B-cell lymphopoiesis, myelopoiesis in bone marrow and heart ventricular septum formation.

Length	93 aa
Molecular Weight	10.6 kDa
Source	*Spodoptera frugiperda (Sf9) cell culture*
Accession Number	P48061

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. Once released, growth factors become available to bind cells and are 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

AlternativeNames	SDF1/Stromal cell-derived factor 1
Endotoxin Level	<0.06 EU/ml as measured by gel clot LAL assay
Formulation	PODS® were lyophilized from a volatile solution
AA Sequence	MNAKVVVVLV LVLTALCLSD GKPVSLSYRC PCRFFESHVA RANVKHLKIL NTPNCALQIV ARLKNNNRQV CIDPKLKWIQ EYLEKALNKR FKM*

Preparation and Storage

Reconstitution

Ensure the PODS® are resuspended in buffer by pipetting up and down immediately before aliquoting. PODS® may be reconstituted at 100 ug/ml in water. 20% glucose has a buoyant density closer to PODS® and can be useful for slowing sedimentation when aliquoting. PODS® are highly stable when stored in aqueous solution (pH range 6 - 8).

Stability and Storage Upon receipt, store at 4°C. PODS® are stable for at least 1 year when dry and 6 months when resuspended.

Last updated on 02/08/2024. For further information mail *tech@cellgs.com*.