



PPH347 PODS[®] Human CDNF

Description

The product contains the polyhedrin protein co-crystalized with Human CDNF. Cerebral Dopamine Neurotrophic Factor (CDNF) and MANF (mesencephalic-astrocyte-derived neurotrophic factor) are structural homologues and share 62% amino acid (aa) identity. Furthermore, CDNF is highly conserved across species. It shares 80%, 84%, 90% and 92% aa identity with mouse, rat, equine and bovine CDNF, respectively. Like MANF and GDNF, CDNF is expressed in brain, neuronal and certain non-neuronal tissues. It has been shown to promote survival, growth and function of dopamine-specific neurons (DNs) in vitro. Additionally, in rat Parkinson's disease models that rely on 6-hydroxydopamine (6-OHDA)-induced degeneration of DNs, CDNF can also promote rescue and restoration of DNs in the substantia nigra in vivo.

Length	209 aa
Molecular Weight	23.7 kDa
Source	<i>Spodoptera frugiperda (Sf9) cell culture</i>
Accession Number	Q49AH0

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

Alternative Names	Cerebral Dopamine Neurotrophic Factor, Conserved Dopamine Neurotrophic Factor, Arginine-Rich, Mutated In Early Stage Tumors-Like 1, ARMET-Like Protein 1, ARMETL1
Endotoxin Level	<0.06 EU/ml as measured by gel clot LAL assay
Formulation	PODS® were lyophilized from a volatile solution
AA Sequence	MADVAGTSNR DFRGREQRLF NSEQYNYNNS KNSRPSTSLY KKAGFQGQEA GGRPGADCEV CKEFLNRFYK SLIDRGVNFS LDTIEKELIS FCLDTKGKEN RLCYLGGATK DAATKILSEV TRPMSVHMPA MKICEKLLKLL DSQICELKYE KTLDLASVDL RKMVAELKQ ILHSWGEECR ACAECTDYVN LIQELAPKYA ATHPKTEL

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.