Synonym

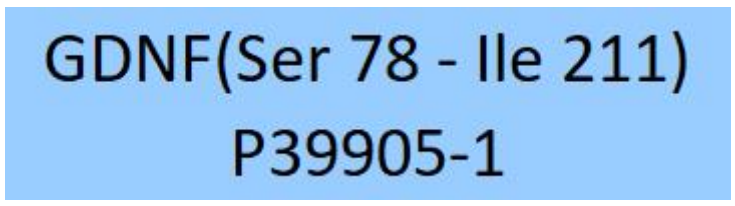
GDNF,ATF

Source

Human GDNF Protein, premium grade(GDF-H5219) is expressed from human 293 cells (HEK293). It contains AA Ser 78 - Ile 211 (Accession # P39905-1).
Predicted N-terminus: Ser 78

It is produced under our rigorous quality control system that incorporates a comprehensive set of tests including sterility and endotoxin tests. Product performance is carefully validated and tested for compatibility for cell culture use or any other applications in the early preclinical stage. When ready to transition into later clinical phases, we also offer a custom GMP protein service that tailors to your needs. We will work with you to customize and develop a GMP-grade product in accordance with your requests that also meets the requirements for raw and ancillary materials use in cell manufacturing of cell-based therapies.

Molecular Characterization



This protein carries no "tag".

The protein has a calculated MW of 15.1 kDa. The protein migrates as 15-22 kDa when calibrated against Star Ribbon Pre-stained Protein Marker under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 0.1 EU per μg by the LAL method.

Sterility

Negative

Mycoplasma

Negative.

Purity

>90% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

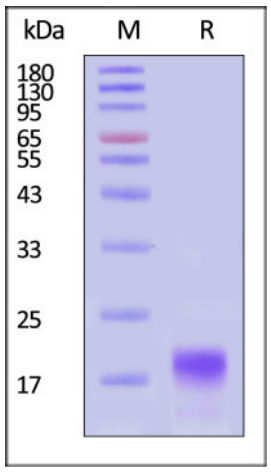
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

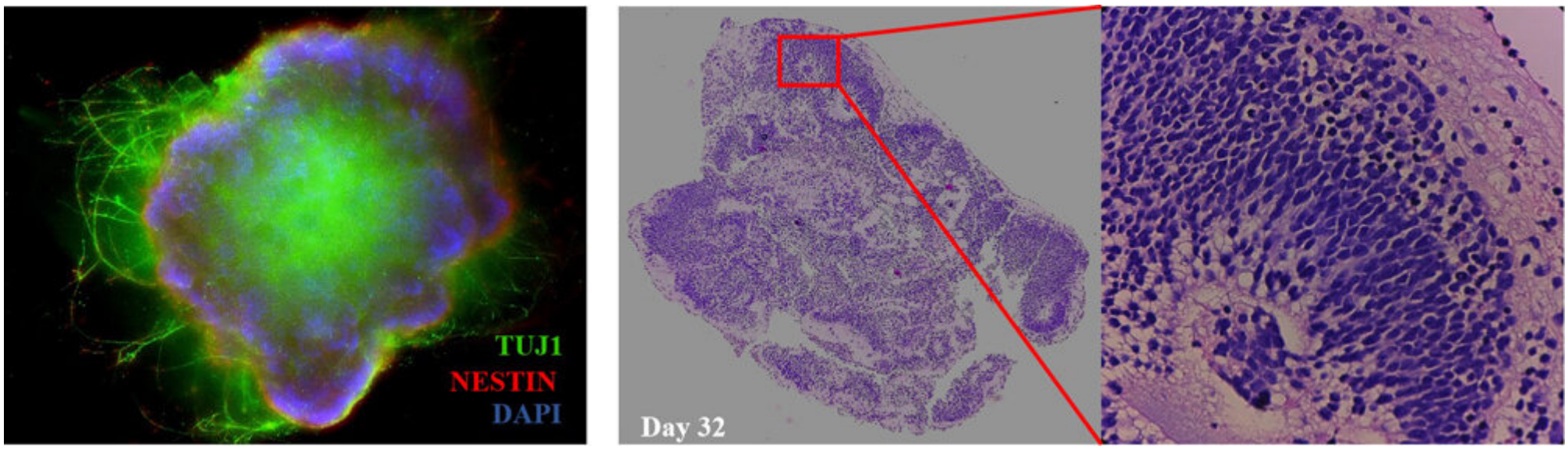
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



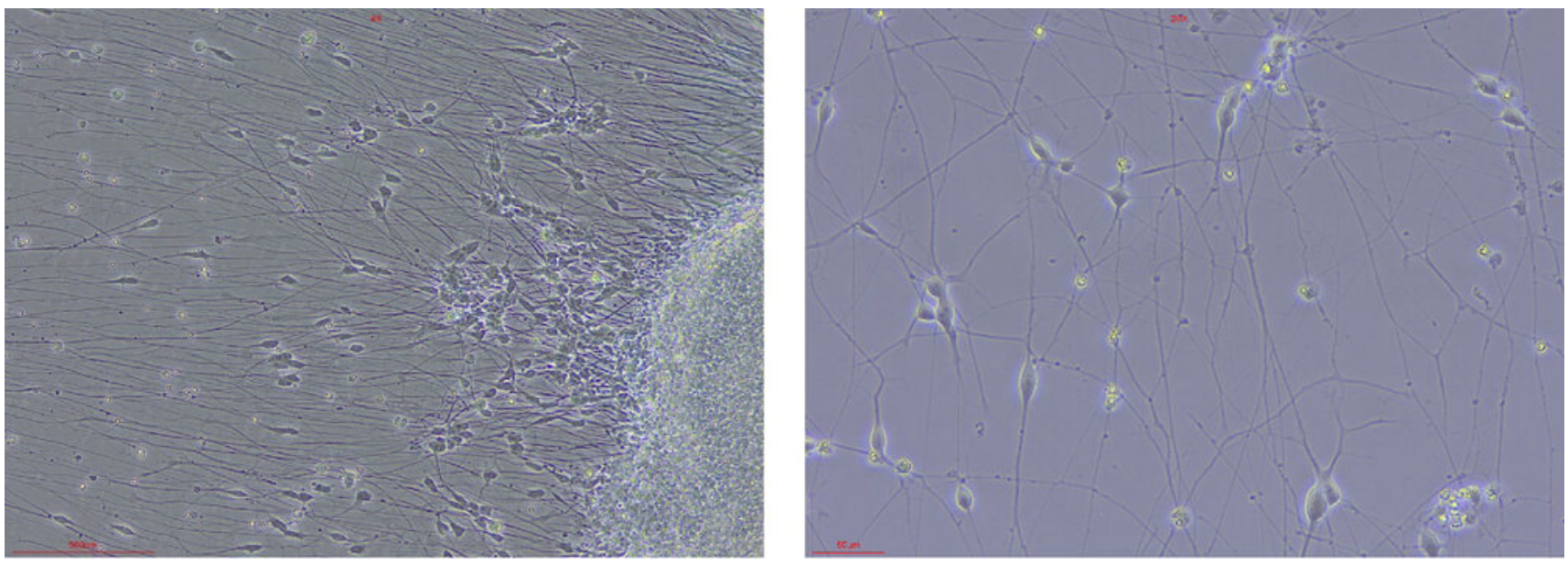
Human GDNF Protein, premium grade on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90% (With Star Ribbon Pre-stained Protein Marker).

Bioactivity-Organoid Culture



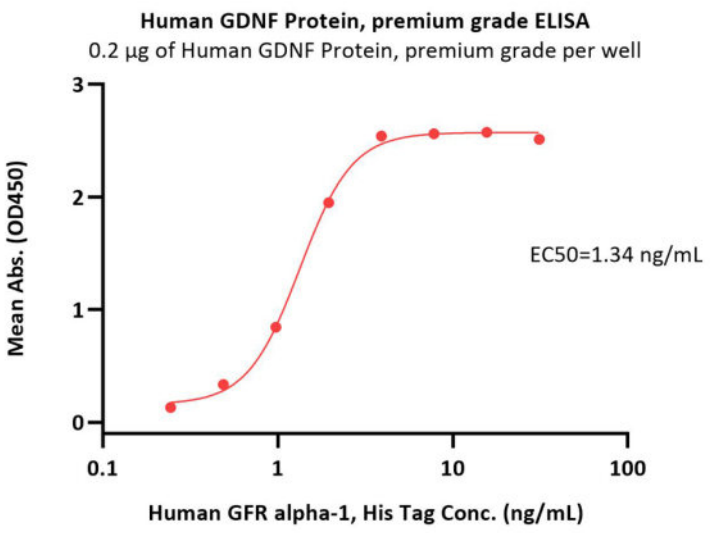
iPSC derived human brain organoids, expressing neuron marker TUJ1 (green) and neuron stem cell marker NESTIN (red), were cultured for 36 days with BDNF (Cat. No. BDF-H5219) and GDNF (Cat. No. GDF-H5219). H&E staining showed brain organoids had classic neuron stem cell rossettes histology.

Bioactivity-Stem Cell Culture



iPSC derived neurons forming axon net-works were cultured with differentiation protocol, including BDNF (Cat. No. BDF-H5219) and GDNF (Cat. No. GDF-H5219).

Bioactivity-ELISA



Immobilized Human GDNF Protein, premium grade (Cat. No. GDF-H5219) at 2 μg/mL (100 μL/well) can bind Human GFR alpha-1, His Tag (Cat. No. GF1-H5224) with a linear range of 0.2-4 ng/mL (QC tested).

Background

Glial cell line-derived neurotrophic factor (GDNF) is a neurotrophic factor that enhances survival and morphological differentiation of dopaminergic neurons and increases their high-affinity dopamine uptake. GDNF is a glycosylated, disulfide-bonded homodimer that is a distantly related member of the transforming growth factor-beta superfamily. The GDNF family members (consists of GDNF, neurturin, artemin and persephin) are structurally similar to transforming growth factor-beta. Unlike other members of the TGF-beta superfamily, which signal through the receptor serine-threonine kinases, GDNF family ligands activate intracellular signalling cascades via the receptor tyrosine kinase Ret. GDNF family ligands binds to GDNF family receptor alpha (GFRalpha) and then the GDNF family ligand-GFR alpha complex binds to and stimulates autophosphorylation of Ret.

Clinical and Translational Updates