



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human NEUROG2-11R Protein
Catalog Number: hTF-2371
Manufacturer: LD Biopharma, Inc.

Introduction

Human Neurogenin-2 (NEUROG2) gene encodes a neural-specific basic helix-loop-helix (bHLH) transcription factor that can specify a neuronal fate on ectodermal cells and is expressed in neural progenitor cells within the developing central and peripheral nervous systems. The protein product of this gene also plays a role in the differentiation and survival of midbrain dopaminergic neurons. NEUROG2 activates gene transcription by binding to the promoter / enhancer E box (5'-CANNTG-3'). Recent data indicated that transformation of NEUROG2 single gene can trans-differentiate human fibroblast cell into a neuronal cell in vitro.

Full-length human NEUROG2 cDNA (271aa, derived BC036847) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal and 11 Poly-Arginine (11R) tag at its C-terminal. It was expressed in *E. coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: NGN2 (Atoh4; NGN2; bHLHa8; Math4a)
Accession Number: NP_076924
Species: Human
Size: 50 µg / Vial
Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Chao Wang, et al., *Scalable production of iPS-derived human Neurons to identify Tau-lowering compounds by high-content screening*. Stem Cell report.
<http://dx.doi.org/10.1016/j.stemcr.2017.08.019> (2017)



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Zhao P, et al., *Neurogenin 2 enhances the generation of patient-specific induced neuronal cells*. Brain Res. 1615, 51-60 (2015)

Busskamp V, et al., *Rapid neurogenesis through transcriptional activation in human stem cells*. Mol. Syst. Biol. 10, 760 (2014)

Perrin FE, et al., *Grafted human embryonic progenitors expressing neurogenin-2 stimulate axonal sprouting and improve motor recovery after severe spinal cord injury*. PLoS ONE 5 (12), E15914 (2010)

Applications

1. May be used for in vitro NEUROG2 mediated gene transcription regulation study in neuronal cell's differentiation by intracellular delivery of this protein directly in to cell culture.
2. May be used for mapping protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein for monitoring in vitro neuronal stem cell differentiation by using its specific antibody.
5. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHENLYFQGGEFFVKSETLELKEEEDVLVLLGSASPALAALTPLSSS
ADEEEEEEPGASGGARRQRGAEEAGQGARGGVAAGAEGCRPARLLGLVHDCRRRPSRARAVSRGA
KTAETVQRIKKTRRLKANNRERNRMHNLNAALDALREVLPTFPEDAKLTKIETLRF AHNYI WAL
TETLRLADHCGGGGGGLPGALFSEAVLLSPGGASAALSSSGDSPSPASTW SCTNSPAPSSSVSS
NSTSPYSCTLSPASPAGSDMDYWQPPPPDKHRYAPHLPIARDCIESGGGGSPGRRRRRRRRRRR