



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human ASCL1-11R Protein  
**Catalog Number:** hTF-0078  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human Ascl1 gene encodes a member of the basic helix-loop-helix (BHLH) family of transcription factors. The protein activates transcription by binding to the E box (5'-CANNTG-3'). Dimerization with other BHLH proteins is required for efficient DNA binding. The combination of three transcription factors, ASCL1, POU3F2/BRN2 and MYT1L, is sufficient to reprogram fibroblasts and other somatic cells into induced neuronal (iN) cells in vitro. It plays a role at early stages of development of specific neural lineages in most regions of the CNS, and of several lineages in the PNS. Essential for the generation of olfactory and autonomic neurons. Acts synergistically with FOXN4 to specify the identity of V2b neurons rather than V2a from bipotential p2 progenitors during spinal cord neurogenesis, probably through DLL4-NOTCH signaling activation

Full-length human Ascl1 cDNA ( 235aa ) 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:** ASCL1 ( ASH-1; hASG1; BHLHA46; MASH1 )  
**Accession Number:** NP\_004307  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

### Key References



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Marisa Karow, et al., *Direct pericyte-to -neuron reprogramming via unfolding of a neural stem cell-like program*. Nature Neuroscience. ,DOI:10.1038/s41593-018-0168-3 (2018)

Park NI, et al., *ASCL1 Reorganizes Chromatin to Direct Neuronal Fate and Suppress Tumorigenicity of Glioblastoma Stem Cells*. Cell Stem Cell 21 (2), 209-224 (2017)

Thomas Vierbuchen et al. *Direct conversion of fibroblasts to functional neurons by defined factors*. NATURE. Vol 463/25 February 2010. Pp: 1035 - 1038.

Hongyan Zhou, et al. *Generation of Induced Pluripotent Stem Cells Using Recombinant Proteins*. Cell Stem Cell. 2009. 4: 381-384.

Vladimir Torchilin. *Intracellular delivery of protein and peptide therapeutics*. Drug Discovery Today's: Technologies. 2009.01.002,

## Applications

1. May be used for in vitro Ascl1 mediated gene transcription regulation study in neuronal cell's differentiation by in vitro intracellular delivery of this Ascl1-11R protein directly in cell culture
2. May be used for mapping Ascl1 protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential therapeutic target protein for glioblastoma treatment drug development..
5. As native human ASCL1 immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Human ASCL1 -11R Protein Sequence ( 31.2 kD )

MASMTGGQQMGRGHHHHHENLYFQGGEFESSAKMESGGAGQQPQPQPQPFLPPAACFFATAA  
AAAAAAAAAAAAQSAQQQQQQQQQQQAPQLRPAADGQPSGGGHKSAPKQVKRQRSSSPELMRCK  
RRLNFSFGFGYSLPQQQPAAVARRNERERNRVKLVNLGFATLREHVPNGAANKKMSKVETLRSV  
EYIRALQQLLDEHDAVSAAFQAGVLSPTISPNYSNDLNSMAGSPVSSYSDEGSYDPLSPEEQE  
LLDFTNWFLEESGGGSPGRRRRRRRRRR