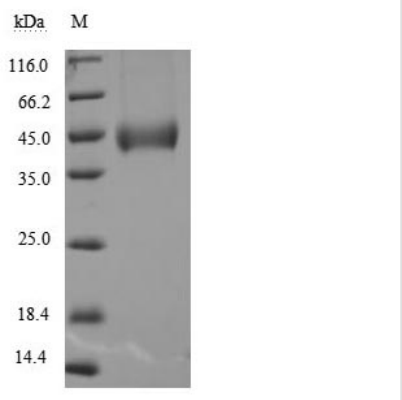
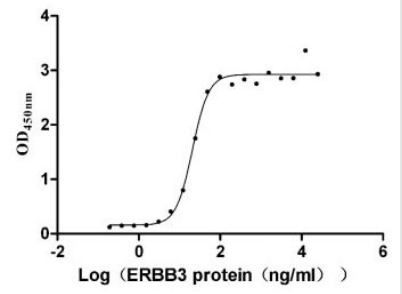
Recombinant Human Pro-neuregulin-1, membrane-bound isoform (NRG1), partial (Active)

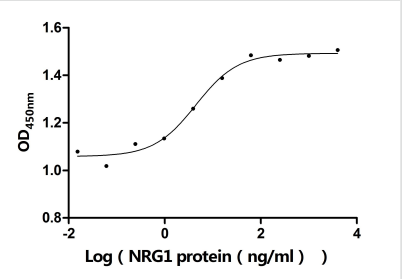
Product Code	CSB-MP016077HU1(F6)
Abbreviation	Recombinant Human NRG1 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q02297
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	①Measured by its binding ability in a functional ELISA. Immobilized NRG1 at 2 μg/ml can bind human ERBB3?CSB-MP007765HU?, the EC50 is 18.24-23.66 ng/ml. ②The ED50 as determined by the dose-dependent stimulation of the proliferation of MCF-7 cells is 2.626-7.598 ng/mL.
Purity	Greater than 95% as determined by SDS-PAGE. Greater than 95% as determined by SEC-HPLC.
Sequence	SGKKPESAAGSQSPALPPRLKEMKSQESAAGSKLVLRCETSSEYSSLRFKWF KNGNELNRKNKPQNIKIQKKPGKSELRINKASLADSGEYMCKVISKLGNDSASA NITIVESNEIITGMPASTEGAYVSSESPIRISVSTEGANTSSSTSTSTTGTSHLVK CAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYVMASFYKH LGIEFMEAEELYQKR
Source	Mammalian cell
Target Names	NRG1
Expression Region	20-247aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 6xHis-tagged
Mol. Weight	27.1 kDa
Protein Length	Partial of Isoform 6
Image	



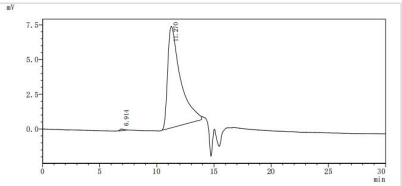
(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Activity
Measured by its binding ability in a functional ELISA. Immobilized NRG1 at 2 μg/ml can bind human ERBB3(CSB-MP007765HU), the EC_{50} is 18.24-23.66 ng/ml.



Activity
The ED_{50} as determined by the dose-dependent stimulation of the proliferation of MCF-7 cells is 2.626-7.598 ng/mL.



The purity of NRG1 was greater than 95% as determined by SEC-HPLC

Description

The recombinant human NRG1 protein is expressed in mammalian cells using a plasmid construct containing the gene sequence coding for residues 20-247 of human NRG1. The NRG1 protein features a C-terminal 6xHis-tag. Its purity exceeds 95% validated by SDS-PAGE, and endotoxin content remains below 1.0 EU/μg, determined via the LAL assay. The NRG1 protein is biologically active, with ELISA results showing specific binding to the human ERBB3 (CSB-MP007765HU). The EC_{50} is in the range of 18.24-23.66 ng/mL.

Human pro-neuregulin-1, commonly called neuregulin-1 (NRG1), is a member of the neuregulin family of growth factors, which plays a crucial role in various physiological processes, particularly in the nervous system and cardiac function. NRG1 is known for its involvement in the development and maintenance of the peripheral nervous system, as well as its neuroprotective properties in various

neurological conditions.

NRG1 signaling is mediated through its receptors ErbB2, ErbB3, and ErbB4. The binding of NRG1 to these receptors initiates signaling pathways such as MAPK, PI3K-Akt, and Fyn-mediated NMDA receptor phosphorylation that are essential for neuronal survival, differentiation, migration, myelination, synaptic function, and glucose metabolism [1][2]. Dysregulation of NRG1 signaling has been implicated in the pathogenesis of neurological and psychiatric disorders such as schizophrenia [3-5]. NRG1 has been shown to promote Schwann cell myelination and support the regeneration of peripheral nerves following injury [6].

In addition to its role in nerve development, NRG1 has significant implications in cardiac health. It has been demonstrated that NRG1 can counteract excessive beta-adrenergic activation, which is a critical factor in heart failure [7]. The neuroprotective effects of NRG1 extend to conditions such as ischemic stroke, where it has been shown to improve neurological outcomes and reduce neuronal death [8][9]. This protective role is attributed to its ability to modulate inflammatory responses and promote cell survival through the activation of various intracellular signaling pathways [10].

References:

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Endotoxin	Less than 1.0 EU/ug as determined by LAL method.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.