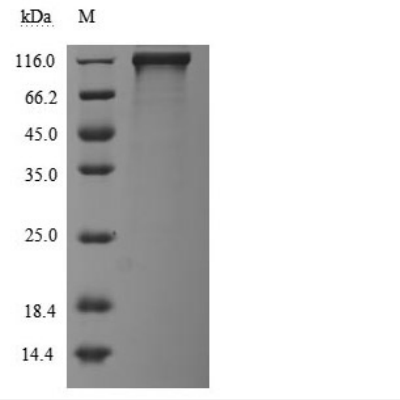
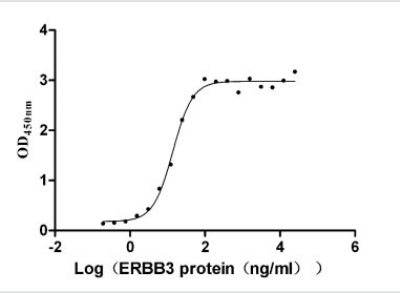
Recombinant Human Receptor tyrosine-protein kinase erbB-3 (ERBB3), partial (Active)

Product Code	CSB-MP007765HU
Abbreviation	Recombinant Human ERBB3 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.	P21860
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, 6% Trehalose, pH 7.4
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized NRG1(CSB-MP016077HU1(F6)) at 2 μg/ml can bind human ERBB3, the EC_{50} is 12.32-15.74 ng/ml.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	SEVGNSQAVCPGTLNGLSVTGDAENQYQTLYKLYERCEVVMGNLEIVLTGHN ADLSFLQWIREVTGYVLVAMNEFSTLPLPNLRVVRGTQVYDGKFAIFVMLNYN TNSSHALRQLRLTQLTEILSGGVYIEKNDKLCHMDTIDWRDIVRDRDAEIVVKD NGRSCPPCHEVCKGRCWGPGSEDCQTLTKTICAPQCNGHCFGPNPNQCCH DECAGGCSGPQDTDCFACRHFNDSGACVPRCPQPLVYNKLTFQLEPNPHTK YQYGGVCVASCPHNFVVDQTSCVRACPPDKMEVDKNGLKMCEPCGGLCPKA CEGTGSGSRFQTVDSSNIDGFVNCTKILGNLDFLITGLNGDPWHKIPALDPEKL NVFRTVREITGYLNIQSWPPHMHNFSVFSNLTTIGGRSLYNRGFSLLIMKNLNV TSLGFRSLKEISAGRIYISANRQLCYHHSLNWTKVLRGPTEERLDIKHNRPRRD CVAEGKVCDPLCSSGGCWGPGPGQCLSCRNYSRGGVCVTHCNFLNGEPRE FAHEAECFSCHPECQPMEGTATCNGSGSDTCAQCAHFRDGPHCVSSCPHGV LGAKGPIYKYPDVQNECRPCHENCTQGCKGPELQDCLGQTLVLIGKTHLT
Source	Mammalian cell
Target Names	ERBB3
Expression Region	20-643aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal hFc1-tagged
Mol. Weight	96.4 kDa
Protein Length	Partial

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(CSB-MP016077HU1(F6)) at 2 μg/ml can bind human ERBB3, the EC_{50} is 12.32-15.74 ng/ml.

Description

The recombinant human ERBB3 protein is produced in mammalian cells by expressing a plasmid carrying the gene fragment encoding amino acids 20-643 of the human ERBB3 protein. This protein carries a C-terminal hFc-tag. The purified ERBB3 protein has a purity exceeding 95% as confirmed by SDS-PAGE and contains endotoxin levels below 1.0 EU/μg, as measured using the LAL assay. Biological activity testing confirms its functionality, and ELISA demonstrates its specific binding to the NRG1 (CSB-MP016077HU1(F6)) with an EC_{50} between 12.32 and 15.74 ng/mL.

The ERBB3, also known as HER3, lacks intrinsic tyrosine kinase activity but plays a crucial role in signaling pathways through dimerization with other ERBB family members, particularly ERBB2. This dimerization activates downstream signaling cascades, including the PI3K and MAPK pathways, which are essential for cell survival, proliferation, and differentiation [1][2].

ERBB3 is widely expressed in various tissues, including the mammary glands, prostate, and heart, and is involved in several physiological processes. It has been shown to regulate mammary epithelial survival and differentiation during pregnancy and lactation [3]. In the context of cancer, ERBB3 is often overexpressed and has been implicated in tumorigenesis, particularly in breast and prostate cancers. Its interaction with ERBB2 is critical, as the ERBB2/ERBB3 heterodimer is one of the most potent complexes for activating oncogenic signaling pathways [4][5]. Moreover, ERBB3 has been identified as a potential therapeutic target in cancer treatment, with monoclonal antibodies being developed to inhibit its signaling [5][6].

In addition to its role in cancer, ERBB3 has been associated with autoimmune

diseases, such as type 1 diabetes (T1D). Genetic variations in the ERBB3 gene have been linked to an increased risk of T1D, suggesting that ERBB3 may influence immune responses and beta-cell function in the pancreas [7][8][9]. The gene's expression can be modulated by various factors, including insulin levels, which further highlights its role in metabolic regulation [8][9].

References:

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[6] K. Meetze, S. Vincent, S. Tyler, E. Mazsa, A. Delpero, S. Bottega, et al. Neuregulin 1 expression is a predictive biomarker for response to av-203, an erbb3 inhibitory antibody, in human tumor models, Clinical Cancer Research, vol. 21, no. 5, p. 1106-1114, 2015. https://doi.org/10.1158/1078-0432.ccr-14-2407
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[8] H. Wang, Y. Jin, M. Reddy, R. Podolsky, S. Liu, P. Yang, et al. Genetically dependent erbb3 expression modulates antigen presenting cell function and type 1 diabetes risk, Plos One, vol. 5, no. 7, p. e11789, 2010. https://doi.org/10.1371/journal.pone.0011789
[9] D. Wang and G. Pan. The association between rs2292239 polymorphism in erbb3 gene and type 1 diabetes: a meta-analysis, Biomed Research International, vol. 2019, p. 1-7, 2019. https://doi.org/10.1155/2019/7689642

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.