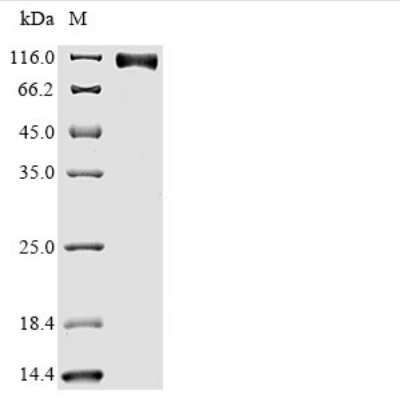
Recombinant Human Epidermal growth factor receptor (EGFR), partial (Active)

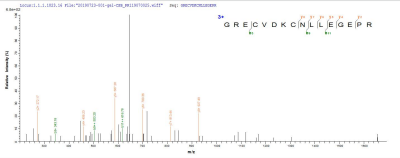
Product Code	CSB-MP007479HU
Abbreviation	Recombinant Human EGFR protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P00533
Storage Buffer	Lyophilized from a 0.2 μm filtered 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0
Product Type	Others
Immunogen Species	Homo sapiens (Human)
Biological Activity	①Measured by its binding ability in a functional ELISA. Immobilized EGFR at 1 μg/ml can bind Anti-EGFR recombinant antibody, the EC50 of human EGFR protein is 2.867-3.571 ng/ml.②Human EGF protein captured on COOH chip can bind Human EGFR protein, his and Myc tag (CSB-MP007479HU) with an affinity constant of 11.9nM as detected by LSPR Assay.③Measured by its binding ability in a functional ELISA. Immobilized EGFR at 1 μg/ml can bind Cetuximab, the EC_{50} of human EGFR protein is 0.6919-1.047 ng/ml.
Purity	Greater than 95% as determined by SDS-PAGE. Greater than 95% as determined by SEC-HPLC.
Sequence	LEEKKVCQGTSNKLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLS FLKTIQEVAGYVLIALNTVERIPLENLQIIRGNMYYENSYALAVLSNYDANKTGLK ELPMRNLQEILHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSMDFQNHLGS CQKCDPSCPNGSCWGAGEENCQKLTKIICAQQCSGRCRGKSPSDCCHNQCA AGCTGPRESDCLVCRKFRDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFG ATCVKKCPRNYVVTDHGSCVRACGADSYEMEEDGVRKCKKCEGPCRKVCN GIGIGEFKDSLSINATNIKHFKNCTSISGDLHILPVAFRGDSFTHTPPLDPQELDIL KTVKEITGFLLIQAWPENRTDLHAFENLEIIRGRTKQHGQFSLAVVSLNITSLGL RSLKEISDGDVIISGNKNLCYANTINWKKLFGTSGQKTKIISNRGENSCKATGQV CHALCSPEGCWGPEPRDCVSCRNVSRGRECVDKCNLLEGEPREFVENSECI QCHPECLPQAMNITCTGRGPDNCIQCAHYIDGPHCVKTCPAGVMGENNTLVW KYADAGHVCHLCHPNCTYGCTGPGLEGCPTNGPKIPS
Research Area	Cancer
Source	Mammalian cell
Target Names	EGFR
Expression Region	25-645aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at

	4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	73.6 kDa
Protein Length	Extracellular Domain

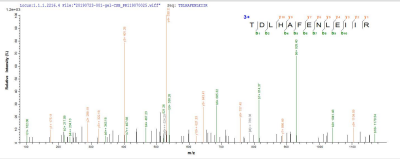
Image



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



Based on the SEQUEST from database of Mammalian Cell host and target protein, the LC-MS/MS Analysis result of CSB-MP007479HU could indicate that this peptide derived from Mammalian Cell-expressed Homo sapiens (Human) EGFR.



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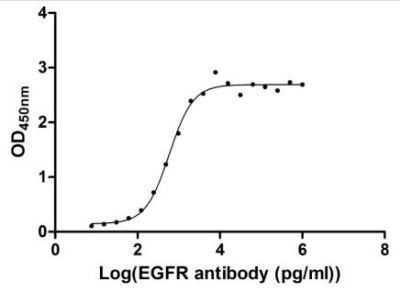
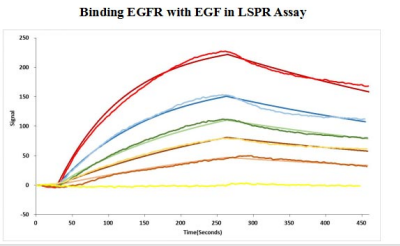
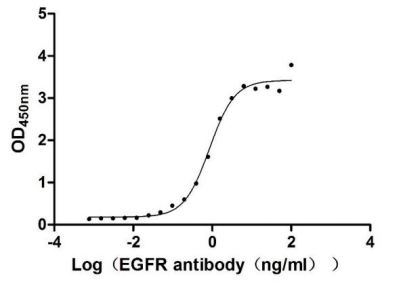


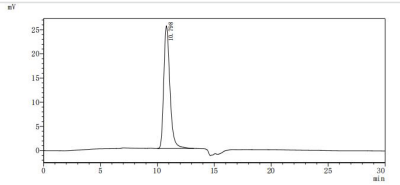
Measured by its binding ability in a functional ELISA. Immobilized EGFR at 1 μg/ml can bind Anti-EGFR recombinant antibody, the EC50 of human EGFR protein is 2.867-3.571 ng/ml.



Human EGF protein captured on COOH chip can bind Human EGFR protein, his and Myc tag (CSB-MP007479HU) with an affinity constant of 11.9nM as detected by LSPR Assay.



Activity
Measured by its binding ability in a functional ELISA. Immobilized EGFR at 1 μg/ml can bind Cetuximab, the EC_{50} of human EGFR protein is 0.6919-1.047 ng/ml.



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

Description

The gene coding for the human Epidermal growth factor receptor (EGFR) protein (25-645aa) is co-introduced into a plasmid vector with the N-terminal 10xHis-tag gene and the C-terminal Myc-tag gene, creating recombinant plasmid that is subsequently transformed into mammalian cells. mammalian cells capable of surviving in the presence of a specific antibiotic are selected and then cultured under conditions favorable for the expression of the gene of interest. Post-expression, the recombinant human EGFR protein is isolated and purified from the cell lysate using affinity purification. Denaturing SDS-PAGE is applied to resolve the resulting recombinant human EGFR protein, revealing a purity exceeding 90%. This recombinant human EGFR protein has been validated as active in functional ELISA and LSPR assy. Its endotoxin content is less than 1.0 EU/ug as determined by the LAL method.

The Epidermal Growth Factor Receptor (EGFR) is a protein on cell surfaces that guides vital cell activities. It gets activated when specific molecules, like EGF, bind to it, setting off a chain reaction inside cells [1]. When EGFR doesn't work properly, it's closely tied to various cancers, including brain, lung, and breast cancer [2]. Recent research shows EGFR can also help cancer cells survive even without its typical signaling, suggesting it is a potential target for new cancer treatments [3][4]. Moreover, EGFR sparks important cell pathways, controlling how cells respond to their environment [5].

In cancer, EGFR seems to help lung tumors dodge the immune system by ramping up substances that dampen immune responses [6]. It's also linked to controlling a protein called PD-L1 in esophageal cancer, influencing how the immune system reacts [7]. Plus, EGFR kicks off a process called nuclear factor κB signaling, which fuels the growth of EGFR-related tumors [2]. Understanding how lung cancer patients respond to drugs targeting EGFR is tricky, showing the challenges in treating EGFR-related cancers [8].

EGFR isn't just about cancer—it's involved in many cell jobs like cell death, growth, and specialization through its signals [9][10]. It even plays a role in the growth and movement of cells important for pregnancy, showing its relevance beyond cancer [11]. Additionally, EGFR is connected to activating a protein

called cyclooxygenase-2, which drives certain cancers forward [12].

References:

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Endotoxin	Less than 1.0 EU/ug as determined by LAL method.
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.