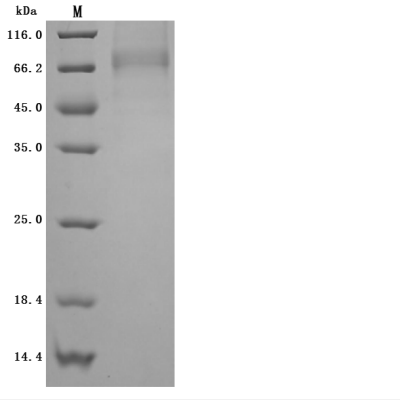
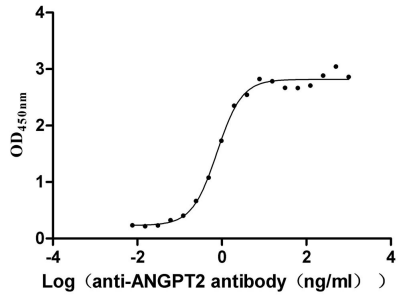
Recombinant Human Angiopoietin-2 (ANGPT2) (Active)

Product Code	CSB-MP001707HU(A4)
Abbreviation	Recombinant Human ANGPT2 protein (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.	O15123
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	Measured by its binding ability in a functional ELISA. Immobilized Human ANGPT2 at 2 μg/mL can bind anti-ANGPT2 recombinant antibody(CSB-RA001707MA01HU), the EC_{50} is 0.6666-0.8876 ng/mL.
Purity	Greater than 90% as determined by SDS-PAGE. Greater than 90% as determined by SEC-HPLC.
Sequence	YNNFRKSMDSIGKKQYQVQHGSCSYTFLLPEMDNCRSSSSPYVSNAVQRDA PLEYDDSVQRLQVLENIMENNTQWLMKLENYIQDNMKKEMVEIQQNAVQNQT AVMIEIGTNLLNQTAEQTRKLTDVEAQVLNQTTRLELQLLEHSLSTNKLEKQILD QTSEINKLQDKNSFLEKKVLAMEDKHIIQLQSIKEEKDQLQVLVSKQNSIIEELEK KIVTATVNNSVLQKQQHDLMETVNNLLTMMSTSNSAKDPTVAKEEQISFRDCA EVFKSGHTTNGIYTLTFPNSTEEIKAYCDMEAGGGGWTIIQRREDGSVDFQRT WKEYKVGFGNPSGEYWLGNEFVSQLTNQQRYVLKIHLKDWEGNEAYSLYEH FYLSSEELNYRIHLKGLTGTAGKISSISQPGNDFSTKDGDNDKCICKCSQMLTG GWWFDACGPSNLNGMYYPQRQNTNKFNGIKWYYWKGSGYSLKATTMMIRP ADF
Source	Mammalian cell
Target Names	ANGPT2
Expression Region	19-496aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 10xHis-tagged
Mol. Weight	56.3 kDa
Protein Length	Full Length of Mature Protein

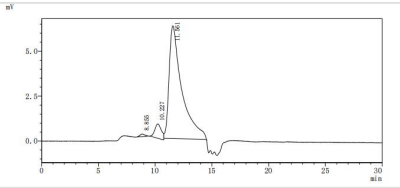
Image



(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 Human ANGPT2 at 2 μg/ml can bind anti-ANGPT2 recombinant antibody(CSB-RA001707MA01HU), the EC_{50} is 0.6666-0.8876 ng/mL.



The purity of ANGPT2 was greater than 90% as determined by SEC-HPLC

Description

This recombinant human ANGPT2 protein represents the biologically active form (amino acids 19-496) of human angiopoietin-2, produced in mammalian cells with C-terminal 10×His tagging. The recombinant ANGPT2 protein demonstrates exceptional purity (>90% by both SDS-PAGE and SEC-HPLC) and meets stringent endotoxin specifications (<1.0 EU/μg, LAL method), ensuring research-grade quality for vascular biology studies.

The ANGPT2 protein exhibits potent biological activity, showing high-affinity binding to anti-ANGPT2 antibody(CSB-RA001707MA01HU) in ELISA (EC_{50}: 0.6666-0.8876 ng/mL at 2 μg/mL immobilization). The mammalian expression system guarantees proper protein folding and post-translational modifications essential for maintaining ANGPT2's native structural and functional characteristics.

Presented as lyophilized powder, this recombinant ANGPT2 protein offers enhanced stability and convenient reconstitution properties. The C-terminal 10×His tag enables efficient purification while preserving biological activity. This recombinant ANGPT2 is particularly valuable for angiogenesis research and vascular development studies, tumor microenvironment investigations, vascular permeability regulation studies, and in vitro and in vivo models of pathological

angiogenesis.

ANGPT2 is a member of the angiopoietin family of growth factors that plays a crucial role in cardiovascular biology and pathology. ANGPT2 acts as a natural antagonist to the Tie2 receptor and participates in the destabilization of existing vasculature and facilitates neovascularization [1-3]. This antagonistic role is particularly pronounced under conditions of inflammation or tissue injury, where ANGPT2 levels increase to help initiate the repair processes through enhanced endothelial permeability and leukocyte recruitment [4].

The interplay between ANGPT2 and ANGPT1 is essential for maintaining vascular homeostasis. Under normal physiological conditions, ANGPT1 exerts its stabilizing effects on the endothelium through Tie2 receptor activation, whereas elevated levels of ANGPT2 can lead to a shift in this balance, resulting in increased endothelial cell dropout and a compromised vascular barrier [3]. This functional duality of ANGPT2 is critical in various pathologies, including cancer, where high levels of ANGPT2 correlate with tumor aggressiveness and poor patient outcomes due to enhanced tumor vascularization [5][6].

Research has indicated the presence of ANGPT2 not only in the systemic circulation but also locally in tissues such as the ovarian follicle, where it plays a significant role in regulating angiogenesis during the ovarian cycle [7]. Furthermore, ANGPT2 has been implicated in several diseases characterized by chronic inflammation, such as obesity and rheumatoid arthritis, suggesting its broader role in the pathology of conditions beyond classical angiogenesis [8][9].

Recent therapeutic strategies have emerged targeting ANGPT2 in cancer treatment, utilizing inhibitors to block its action and potentially curb tumor growth and metastasis [6]. Additionally, while ANGPT2 is often upregulated in solid tumors, its levels can serve as a prognostic biomarker in various cancers, underpinning its relevance in tumor biology and clinical outcomes [10]. Overall, ANGPT2 represents a critical factor in both physiological and pathological angiogenesis, with significant implications for understanding vascular biology and developing targeted therapies.

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.