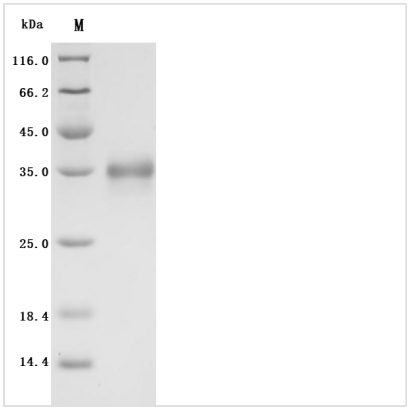
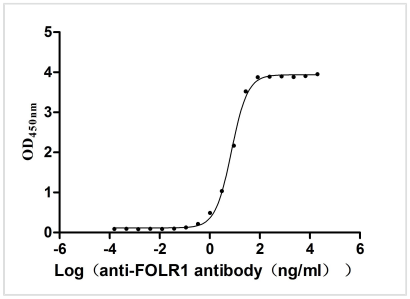
Recombinant Human Folate receptor alpha(FOLR1),partial (Active)

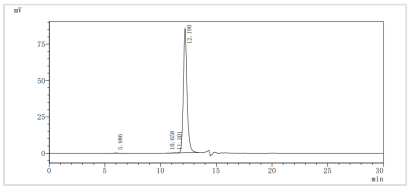
Product Code	CSB-MP008784HU1
Abbreviation	Recombinant Human FOLR1 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P15328
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 human FOLR1 at 2 μg/mL can bind Anti-FOLR1 recombinant antibody(CSB-RA008784MA1HU). The EC50 is 6.893-7.883 ng/mL.
Purity	Greater than 95% as determined by SDS-PAGE. Greater than 95% as determined by SEC-HPLC.
Sequence	RIAWARTELLNVCMNAKHHKEKPGPEDKLHEQCRPWRKNACCSTNTSQEAH KDVSYLYRFNWNHCGEMAPACKRHFIQDTCLYECSPNLGPWIQQVDQSWRK ERVLNVPLCKEDCEQWWEDCRTSYTCKSNWHKGWNWTSGFNKCAVGAAC QPFHFYFPTPTVLCNEIWTHSYKVSNYSRGSGRCIQMWFDPAQGNPNEEVAR FYAAAM
Source	Mammalian cell
Target Names	FOLR1
Expression Region	25-233aa
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	25.9 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 human FOLR1 at 2 μg/ml can bind Anti-FOLR1 recombinant antibody(CSB-RA008784MA1HU). The EC_{50} is 6.893-7.883 ng/mL.



The purity of FOLR1 was greater than 95% as determined by SEC-HPLC

Description

The recombinant human FOLR1 protein production includes gene cloning, plasmid engineering, protein expression, purification, and testing. Primers are designed to amplify the gene segment encoding the 25-233aa of human FOLR1, which is cloned into a plasmid with a C-terminal 10xHis-tag. Mammalian cells are transfected with this plasmid, followed by selective antibiotic screening for the positive cells. The positive cells are cultured for protein expression. The FOLR1 protein is released via cell lysis and purified through Ni-NTA affinity chromatography. Protein purity, assessed by SDS-PAGE and SEC-HPLC, exceeds 95%, and protein endotoxin levels, measured by the LAL method, are below 1.0 EU/μg. ELISA demonstrates the recombinant FOLR1 protein's functional binding to the FOLR1 recombinant antibody (CSB-RA008784MA1HU), with an EC_{50} ranging from 6.893 to 7.883 ng/mL.

Human folate receptor alpha (FRα), also known as FOLR1, is a GPI-anchored membrane protein predominantly expressed in certain epithelial tissues and is notably overexpressed in various malignancies, including ovarian, lung, breast, and renal cancers while exhibiting limited expression in normal tissues [5][6][12].

FOLR1 mainly facilitates the transport of folate into cells through receptor-mediated endocytosis, a process that significantly enhances the efficiency of folate uptake compared to other transport mechanisms [4][14]. The endocytic pathway allows FOLR1 to internalize folate, which is then released into the

cytoplasm for utilization in critical metabolic pathways, including DNA synthesis and repair, and amino acid metabolism [1][3][8][9][15].

FOLR1 is critical for fetal development, as it mediates the transport of folate from the mother to the fetus, thereby influencing neurodevelopmental outcomes [7][10]. Disruptions in FOLR1 function, such as the presence of autoantibodies against the receptor, have been associated with conditions like autism spectrum disorder and cerebral folate deficiency, highlighting the receptor's significance in both developmental and pathological contexts [11][15].

In the context of cancer, the overexpression of FOLR1 has been leveraged for targeted therapies, particularly in drug delivery systems that utilize folate-conjugated agents to selectively deliver cytotoxic drugs to cancer cells [5][16]. This targeting strategy exploits the high expression levels of FOLR1 in tumor tissues, allowing for enhanced therapeutic efficacy while minimizing systemic toxicity [6][14]. Recent studies suggest that FOLR1 may also participate in signaling pathways that influence tumor growth and metastasis [2][13].

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.