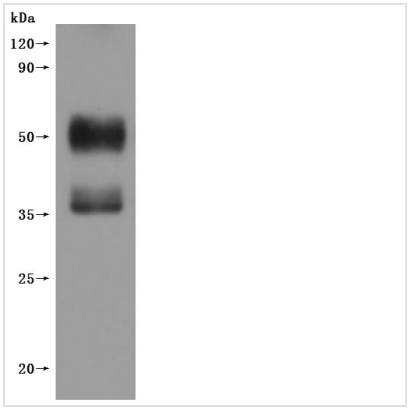
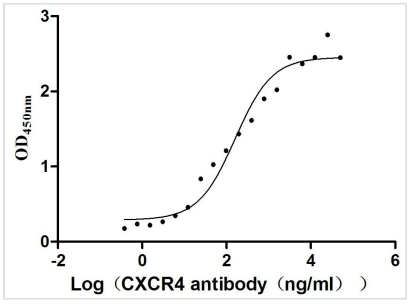
Recombinant Human C-X-C chemokine receptor type 4 (CXCR4)-VLPs (Active)

Product Code	CSB-MP006254HU(F1)
Abbreviation	Recombinant Human CXCR4 protein-VLPs (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.	P61073
Form	Liquid
Storage Buffer	PBS, pH 7.4, 6% trehalose
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human CXCR4 at 10 μg/mL can bind Anti-CXCR4 recombinant antibody (CSB-RA006254MA01HU), the EC_{50} is 101.7-253.6 ng/mL.
Sequence	MEGISIYTSDNYTEEMGSGDYDSMKEPCFREENANFNKIFLPTIYSIIFLTGIVGN GLVILVMGYQKKLRSMTDKYRLHLSVADLLFVITLPFWAVDAVANWYFGNFLC KAVHVIYTVNLYSSVLILAFISLDRYLAIVHATNSQRPRKLLAEKVVYVGVWIPAL LLTIPDFIFANVSEADDRYICDRFYPNDLWVVVFQFQHIMVGLILPGIVILSCYCIII SKLSHSKGHQKRKALKTTVILILAFFACWLPYYIGISIDSFILLEIIKQGCEFENTV HKWISITEALAFFHCCLNPILYAFLGAKFKTSAQHALTSVSRGSSLKILSKGKRG GHSSVSTESESSSFHSS
Source	Mammalian cell
Target Names	CXCR4
Expression Region	1-352aa
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 (This tag can be tested only under denaturing conditions)
Mol. Weight	41.5 kDa
Protein Length	Full Length
Image	



CSB-MP006254HU(F1) is detected by Mouse anti-6*His monoclonal antibody.



Activity
Measured by its binding ability in a functional ELISA. Immobilized Human CXCR4 at 10 μg/ml can bind Anti-CXCR4 recombinant antibody (CSB-RA006254MA01HU), the EC_{50} is 101.7-253.6 ng/mL.

Description

The recombinant human CXCR4 protein is produced through gene cloning, plasmid construction, protein expression, purification, and analysis. The human CXCR4 gene (1-352aa) is co-inserted into a lentiviral vector with a C-terminal 10xHis-tag gene. The recombinant lentiviral vector is transfected into mammalian cells, and after 24 hours, a selective antibiotic is introduced to isolate transfected cells. The transfected cells are cultured to express the CXCR4 protein. After that, the viral capsid proteins are added to the medium to induce the formation of virus-like particles (VLPs). The VLPs are isolated and purified from the medium through ultracentrifugation or affinity chromatography. Their biological activity is validated through a functional ELISA, in which this human CXCR4 protein binds to the CXCR4 recombinant antibody (CSB-RA006254MA01HU), with an EC_{50} of 101.7-253.6 ng/mL.

The human CXCR4 protein, a member of the GPCR family, primarily functions as a receptor for the chemokine CXCL12 (SDF-1), which is crucial for the migration and homing of hematopoietic stem cells, lymphocytes, and other immune cells [1]. The interaction between CXCR4 and CXCL12 is essential for normal development, immune response, tissue repair, and?the progression of several diseases, including cancer and HIV infection [2][3].

CXCR4 is expressed in a wide variety of tissues, including the brain, bone marrow, and lymphoid organs. Its expression levels can vary significantly depending on the cellular context and the presence of specific stimuli [1]. CXCR4 is often overexpressed in tumor cells and is associated with increased metastasis and poor prognosis in various cancers such as breast, lung, and colorectal cancers [3]. It is involved in tumor cell migration, invasion, and the establishment of metastatic niches [4]. Moreover, CXCR4 serves as a co-receptor for HIV-1, facilitating viral entry into host cells [2][3].

β-arrestins play a critical role in regulating CXCR4 signaling, receptor internalization, and desensitization, which are vital for maintaining cellular responses to chemokines [5][6]. Additionally, CXCR4 undergoes post-translational modifications, such as phosphorylation, which modulate its activity and interactions with other proteins [7]. It can also form heteromers with other GPCRs, such as α1-adrenergic receptors, influenc??? its signaling dynamics and functional outcomes [8][9].

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.