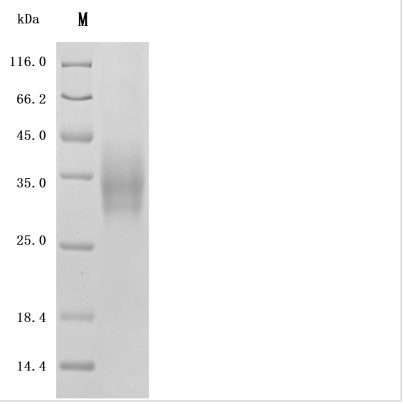
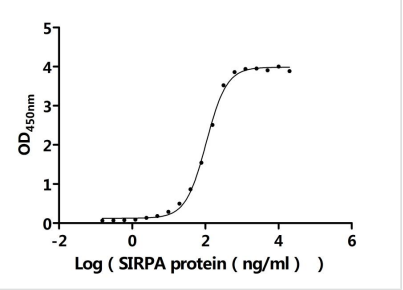
Recombinant Human Leukocyte surface antigen CD47 (CD47), partial (Active)

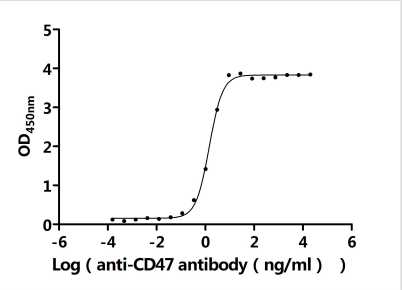
Product Code	CSB-MP004940HUd7
Abbreviation	Recombinant Human CD47 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20?/-80?. The shelf life of lyophilized form is 12 months at -20?/-80?.
Uniprot No.	Q08722
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	①Measured by its binding ability in a functional ELISA. Immobilized Human CD47 (CSB-MP004940HUd7) at 2 μg/mL can bind Human SIRPA protein. The EC50 is 98.73-112.7 ng/mL.②Measured by its binding ability in a functional ELISA. Immobilized Human CD47 at 2 μg/mL can bind Anti-CD47 recombinant antibody (CSB-RA004940MA1HU). The EC50 is 1.343-1.561 ng/mL.
Sequence	QLLFNKTKSVEFTFCNDTVVIPCFVTNMEAQNTTEVYVKWKFKGRDIYTFDGA LNKSTVPTDFSSAKIEVSQLLKGDASLKMDKSDAVSHTGNYTCEVTELTREGE TIIELKYRVVSWFSP
Source	Mammalian cell
Target Names	CD47
Expression Region	19-139aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4? for up to one week.
Tag Info	C-terminal 10xHis-tagged
Mol. Weight	15.1 kDa
Protein Length	Partial
Image	



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



Activity
①Measured by its binding ability in a functional ELISA. Immobilized Human CD47 (CSB-MP004940HUd7) at 2 μg/ml can bind Human SIRPA protein. The EC_{50} is 98.73-112.7 ng/mL.



Activity
②Measured by its binding ability in a functional ELISA. Immobilized Human CD47 at 2 μg/ml can bind Anti-CD47 recombinant antibody (CSB-RA004940MA1HU). The EC_{50} is 1.343-1.561 ng/mL.

Description

The preparation of the recombinant human CD47 protein involves expressing a plasmid containing the sequence for residues 19-139 of the human CD47 in mammalian cells. The gene fragment is co-expressed with the C-terminal 10xHis-tag gene. The resulting protein CD47's endotoxin levels are less than 1.0 EU/μg as determined by the LAL method. ELISA demonstrates the CD47 protein's functional binding to the human SIRPA protein and the CD47 recombinant antibody (CSB-RA004940MA1HU), yielding an EC_{50} of 98.73-112.7 ng/mL and 1.343-1.561 ng/mL, respectively.

Human CD47, also known as the don't eat me signal, is a transmembrane protein that plays a critical role in immune evasion, particularly in the context of cancer. It interacts with signal regulatory protein alpha (SIRPα) on macrophages, inhibiting phagocytosis and allowing tumor cells to escape immune surveillance [1][2][3]. CD47 is widely expressed across various human cancers, including breast, colorectal, ovarian, and lung cancers, where its overexpression is often associated with poor prognosis and adverse clinicopathological features [4][5][6][7].

The mechanism by which CD47 contributes to tumor progression involves its

ability to inhibit macrophage-mediated phagocytosis. When CD47 binds to SIRPα, it triggers a signaling cascade that results in the phosphorylation of immunoreceptor tyrosine-based inhibition motifs (ITIMs) within SIRPα, effectively dampening the immune response [8][9]. This interaction not only protects tumor cells from being engulfed by macrophages but also impairs the activation of T cells, further contributing to an immunosuppressive tumor microenvironment [10][11].

Research has demonstrated that blocking CD47 can enhance the efficacy of various cancer therapies. For instance, anti-CD47 antibodies have shown promise in promoting phagocytosis of cancer cells and synergizing with other therapeutic agents, such as rituximab, to improve treatment outcomes in non-Hodgkin lymphoma and other malignancies [12][13]. Additionally, CD47 blockade has been associated with increased infiltration of CD8+ T cells into tumors, indicating a potential for restoring anti-tumor immunity [14].

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?/-80?. 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.