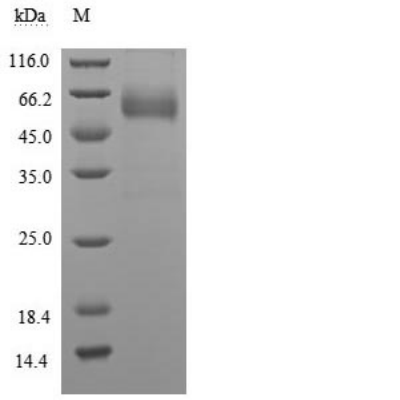
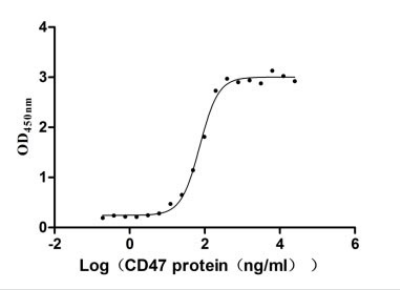
Recombinant Human Leukocyte surface antigen CD47 (CD47), partial (Active)

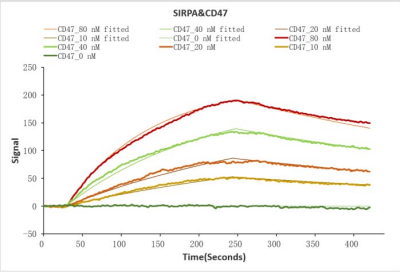
Product Code	CSB-MP004940HU
Relevance	Has a role in both cell adhesion by acting as an adhesion receptor for THBS1 on platelets, and in the modulation of integrins.
Abbreviation	Recombinant Human CD47 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q08722
Form	Lyophilized powder
Product Type	Others
Immunogen Species	Homo sapiens (Human)
Biological Activity	①Measured by its binding ability in a functional ELISA. Immobilized SIRPA (CSB-MP021334HU) at 2 μg/ml can bind human CD47, the EC_{50} of human CD47 protein is 65.91-82.42 ng/ml.②Human SIRPA protein His/Myc tag (CSB-MP021334HU) captured on COOH chip can bind Human CD47 protein Fc tag (CSB-MP004940HU) with an affinity constant of 19.1 nM as detected by LSPR Assay.
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	QLLFNKTKSVEFTFCNDTVVIPCFVTNMEAQNTTEVYVKWKFKGRDIYTFDGALNKSTVPTDFSSAKIEVSQLLKGDASLKMDKSDAVSHTGNYTCEVTELTREGETIIELKYRVVSWFSP
Research Area	Cancer
Source	Mammalian cell
Target Names	CD47
Expression Region	19-139aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal hFc1-tagged
Mol. Weight	41.5 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 SIRPA (CSB-MP021334HU) at 2 μg/ml can bind human CD47, the EC_{50} of human CD47 protein is 65.91-82.42 ng/ml.



Human SIRPA protein His/Myc tag (CSB-MP021334HU) captured on COOH chip can bind Human CD47 protein Fc tag (CSB-MP004940HU) with an affinity constant of 19.1 nM as detected by LSPR Assay.

Description

The synthesis of the recombinant human CD47 protein with a C-terminal hFc-tag starts with cloning the gene that encodes the 19-139aa of the human CD47, fused with the N-terminal His-tag sequence, into a plasmid vector and transforming it into the mammalian cells. Upon induction, the positive mammalian cells express the hFc-tagged CD47 protein, which is extracted by cell lysis. Affinity chromatography is used for the purification of the harvested protein. SDS-PAGE evaluates the protein's purity, exceeding 90%. The endotoxin of this recombinant CD47 is less than 1.0 EU/ug as determined by the LAL method. Its activity has also been validated in a functional ELISA and an LSPR Assay.

Human CD47, a cell surface protein, is widely expressed in different cell types, including cancer cells, where it acts as a self-protection mechanism by interacting with signal regulatory protein alpha (SIRPα) to inhibit phagocytosis by macrophages [1][2]. Studies have shown that CD47 is a key regulator of macrophage-mediated phagocytosis and is involved in the development and progression of various cancers [4][5]. CD47 is frequently upregulated in tumor cells, contributing to tumor growth, metastasis, and immune evasion [3]. Research has demonstrated that targeting CD47 can be an effective strategy in

cancer treatment.

References:
[1] J. Sockolosky, M. Dougan, J. Ingram, C. Ho, M. Kauke, S. Almoet al., Durable antitumor responses to cd47 blockade require adaptive immune stimulation, Proceedings of the National Academy of Sciences, vol. 113, no. 19, 2016. https://doi.org/10.1073/pnas.1604268113
[2] M. Sue, Blockade of sirpα-cd47 axis by anti-sirpα antibody enhances anti-tumor activity of dxd antibody-drug conjugates, Plos One, vol. 19, no. 6, p. e0304985, 2024. https://doi.org/10.1371/journal.pone.0304985
[3] H. La, D. Tran, H. Tran, & L. Nguyen, Third-generation anti-cd47-specific car-t cells effectively kill cancer cells and reduce the genes expression in lung cancer cell metastasis, Journal of Immunology Research, vol. 2021, p. 1-13, 2021. https://doi.org/10.1155/2021/5575260
[4] V. Golubovskaya, R. Berahovich, H. Zhou, S. Xu, H. Harto, L. Liet al., Cd47-car-t cells effectively kill target cancer cells and block pancreatic tumor growth, Cancers, vol. 9, no. 10, p. 139, 2017. https://doi.org/10.3390/cancers9100139
[5] E. Piccione, S. Juárez, J. Liu, S. Tseng, C. Ryan, C. Narayananet al., A bispecific antibody targeting cd47 and cd20 selectively binds and eliminates dual antigen expressing lymphoma cells, Mabs, vol. 7, no. 5, p. 946-956, 2015. https://doi.org/10.1080/19420862.2015.1062192

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.