

PRODUCT INFORMATION



CD47 (human, recombinant)

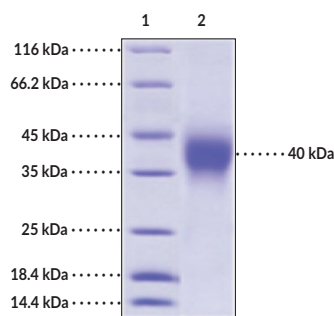
Item No. 32085

Overview and Properties

| | |
|---------------------------|---|
| Synonyms: | IAP, Integrin-associated Protein, Integrin-associated Signal Transducer, Leukocyte Surface Antigen CD47 |
| Source: | Active recombinant human C-terminal His-tagged CD47 expressed in HEK293 cells |
| Amino Acids: | 19-139 |
| Uniprot No.: | Q08722 |
| Molecular Weight: | 15.2 kDa |
| Storage: | -80°C (as supplied) |
| Stability: | ≥1 year |
| Purity: | ≥95% estimated by SDS-PAGE |
| Supplied in: | Lyophilized from sterile PBS, pH 7.4 |
| Endotoxin Testing: | <1.0 EU/μg, determined by the LAL endotoxin assay |
| Bioactivity: | See figures for details |

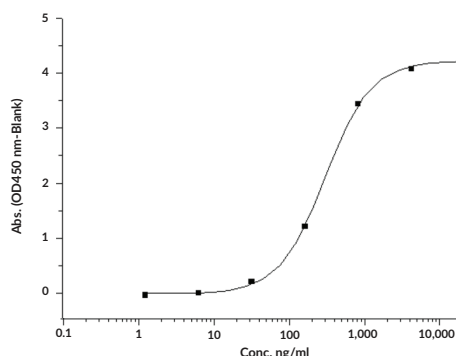
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: CD47

SDS-PAGE Analysis of CD47. This protein has a calculated molecular weight of 15.2 kDa. It has an apparent molecular weight of approximately 40 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Binding ability of immobilized human CD47-His at 10 μg/ml (100 μl/well) to biotinylated human SIRPA-His. The EC_{50} value of biotinylated human SIRPA-His is 0.2-0.5 μg/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

CD47 is a transmembrane protein and ligand for signal regulatory protein α (SIRP α ; Item No. 32082) with roles in phagocytosis, cell adhesion, and migration.¹ It is composed of five transmembrane regions and a single immunoglobulin-like (Ig-like) domain that interacts with the amino terminus of SIRP α to induce inhibitory signaling and prevent phagocytosis. CD47 is expressed on all cells, including erythrocytes and platelets, but the levels of expression on immune cells fluctuates in an immune status- or disease-dependent manner. It interacts with certain integrins and functions as a receptor for the extracellular matrix protein thrombospondin. CD47 is overexpressed in various cancer cells, and anti-CD47 antibodies enhance macrophage phagocytosis of tumor cells *in vitro*.² *Cd47*^{-/-} mice exhibit defective mucosal repair after intestinal biopsy or intestinal mucosal damage induced by dextran sulfate sodium (DSS; Item No. 23250).³ Knockout of *Cd47* also decreases infarct volume and hemispheric swelling in a mouse model of transient focal cerebral ischemia.⁴ It also decreases sensorimotor function deficits, brain lesion volume, and neutrophil infiltration, as well as increases brain blood vessel density in a mouse model of traumatic brain injury.⁵ Cayman's CD47 (human, recombinant) protein can be used for ELISA. This protein consists of 132 amino acids, has a calculated molecular weight of 15.2 kDa, and a predicted N-terminus of Gln19 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 40 kDa due to glycosylation.

References

1. Barclay, A.N. and Van den Berg, T.K. The interaction between signal regulatory protein alpha (SIRP α) and CD47: Structure, function, and therapeutic target. *Annu. Rev. Immunol.* **32**, 25-50 (2014).
2. Veillette, A. and Chen, J. SIRP α -CD47 immune checkpoint blockade in anticancer therapy. *Trends Immunol.* **39(3)**, 173-184 (2018).
3. Reed, M.A., Luissint, A.-C., Azcutia, V., *et al.* Epithelial CD47 is critical for mucosal repair in the murine intestine *in vivo*. *Nat. Commun.* **10(1)**, 5004 (2019).
4. Jin, G., Tsuji, K., Xing, C., *et al.* CD47 gene knockout protects against transient focal cerebral ischemia in mice. *Exp. Neurol.* **217(1)**, 165-170 (2009).
5. Zhao, S., Yu, Z., Liu, Y., *et al.* CD47 deficiency improves neurological outcomes of traumatic brain injury in mice. *Neurosci. Lett.* **643**, 125-130 (2016).

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