SANTA CRUZ BIOTECHNOLOGY, INC.

CD47 (MIAP301): sc-12731

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CD47 is an integral membrane protein that plays a role in the regulation of cation fluxes across cell membranes. Specifically, CD47 is involved in the increase in intracellular calcium concentration that occurs upon cell adhesion to the extracellular matrix. It is also a receptor for the C-terminal cell binding domain of thrombospondin (SIRP). CD47 is absent from Rh-null erythrocytes, but does play a role in cell adhesion in non-erythroid cells and may prevent premature elimination of erythrocytes. It may also be involved in membrane permeability changes following viral infection. CD47 is expressed on hemopoietic cells, epithelial cells, endothelial cells and fibroblasts and is strongly expressed in brain and mesenchymal cells.

REFERENCES

1. Boerman, O., et al. 1989. Monoclonal antibodies against ovarian carcinoma-associated antigens, raised by immunization with cyst fluids. Anticancer Res. 9: 551-558.
2. Knapp, W., et al. 1989. Leukocyte Typing IV: White Cell Differentiation Antigens. New York: Oxford University Press.

CHROMOSOMAL LOCATION

Genetic locus: Cd47 (mouse) mapping to 16 B5.

SOURCE

CD47 (MIAP301) is a rat monoclonal antibody raised against intact CD47 purified from placenta of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD47 (MIAP301) is available conjugated to agarose (sc-12731 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-12731 PE), fluorescein (sc-12731 FITC), Alexa Fluor® 488 (sc-12731 AF488), Alexa Fluor® 546 (sc-12731 AF546), Alexa Fluor® 594 (sc-12731 AF594) or Alexa Fluor® 647 (sc-12731 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-12731 AF680) or Alexa Fluor® 790 (sc-12731 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CD47 (MIAP301) is recommended for detection of the immunoglobulin domain of CD47 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

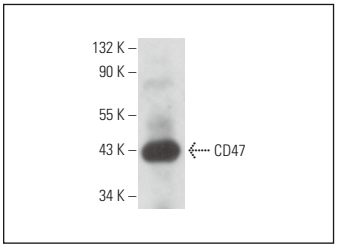
Suitable for use as control antibody for CD47 siRNA (m): sc-35007, CD47 shRNA Plasmid (m): sc-35007-SH and CD47 shRNA (m) Lentiviral Particles: sc-35007-V.

Molecular Weight of CD47: 47-60 kDa.

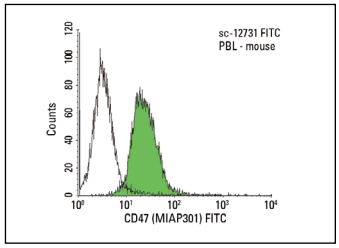
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



CD47 (MIAP301): sc-12731. Western blot analysis of CD47 expression in mouse brain tissue extract.



CD47 (MIAP301) FITC: sc-12731 FITC. FCM analysis of mouse peripheral blood leukocytes. Black line histogram represents the isotype control, normal rat IgG_{2a}-FITC: sc-2831.

SELECT PRODUCT CITATIONS

1. Ogura, T., et al. 2004. Resistance of B16 melanoma cells to CD47-induced negative regulation of motility as a result of aberrant N-glycosylation of SHPS-1. J. Biol. Chem. 279: 13711-13720.
2. Sharifi-Sanjani, M., et al. 2014. Cardiac CD47 drives left ventricular heart failure through Ca^{2+}-CaMKII-regulated induction of HDAC3. J. Am. Heart Assoc. 3: e000670.
3. Csányi, G., et al. 2017. CD47 and nox1 mediate dynamic fluid-phase macropinocytosis of native LDL. Antioxid. Redox Signal. 26: 886-901.
4. Li, F., et al. 2018. Blocking the CD47-SIRPα axis by delivery of anti-CD47 antibody induces antitumor effects in glioma and glioma stem cells. Oncoimmunology 7: e1391973.
5. Ghimire, K., et al. 2019. Deficiency in SIRP-α cytoplasmic recruitment confers protection from acute kidney injury. FASEB J. 33: 11528-11540.
6. Hameed, A.M., et al. 2020. Pharmacologic targeting of renal ischemia-reperfusion injury using a normothermic machine perfusion platform. Sci. Rep. 10: 6930.
7. Reyes-Ruiz, A., et al. 2021. The bovine dialysable leukocyte extract IMMUNEPOTENT CRP induces immunogenic cell death in breast cancer cells leading to long-term antitumour memory. Br. J. Cancer 124: 1398-1410.
8. Chen, J., et al. 2022. Therapeutic nucleus-access BNCT drug combined CD47-targeting gene editing in glioblastoma. J. Nanobiotechnology 20: 102.
9. Podolnikova, N.P., et al. 2023. The CIS association of CD47 with integrin Mac-1 regulates macrophage responses by stabilizing the extended integrin conformation. J. Biol. Chem. 299: 103024.

RESEARCH USE

For research use only, not for use in diagnostic procedures.