SANTA CRUZ BIOTECHNOLOGY, INC.

CD46 (M177): sc-52647

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The Power to Question

BACKGROUND

CD46, also called membrane cofactor protein (MCP), is a transmembrane glycoprotein that exists as a non-disulfide-linked dimer. CD46 regulates the complement cascade by inhibiting C3b and C4b deposited on self tissue. CD46 is a cofactor that binds to C3b and C4b, allowing their degradation by a plasma serine protease called factor I. This function resides in the complement control protein repeats (CCPs), with CCP1-4 essential for regulation. CD46 is widely distributed on thymocytes, T cells, B cells, monocytes, granulocytes, NK cells, platelets, endothelial cells, epithelial cells, fibroblasts, placenta and sperm, but not on erythrocytes. It is the major high affinity receptor for measles virus and human herpes virus. Mouse cells ubiquitously express CRRY, which is a functional ortholog of human decay-accelerating factor (DAF; CD55) and membrane cofactor protein (MCP; CD46).

REFERENCES

1. Iwata, K., et al. 1995. Diversity of sites for measles virus binding and for inactivation of complement C3b and C4b on membrane cofactor protein CD46. J. Biol. Chem. 270: 15148-15152.
2. Liszewski, M.K., et al. 1996. Control of the complement system. Adv. Immunol. 61: 201-283.

CHROMOSOMAL LOCATION

Genetic locus: CD46 (human) mapping to 1q32.2.

SOURCE

CD46 (M177) is a mouse monoclonal antibody raised against CD46 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD46 (M177) is available conjugated to fluorescein (sc-52647 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD46 (M177) is recommended for detection of CD46 of human 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), immunohistochemistry (including paraffin-embedded sections) (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 CD46 siRNA (h): sc-35004, CD46 shRNA Plasmid (h): sc-35004-SH and CD46 shRNA (h) Lentiviral Particles: sc-35004-V.

Molecular Weight of CD46: 56-66 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or MOLT-4 cell lysate: sc-2233.

STORAGE

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

SELECT PRODUCT CITATIONS

1. Pessina, A., et al. 2009. Assessment of human herpesvirus-6 infection in mesenchymal stromal cells *ex vivo* expanded for clinical use. Transpl. Infect. Dis. 11: 491-496.
2. Liu, Y.P., et al. 2014. Ablation of nectin4 binding compromises CD46 usage by a hybrid vesicular stomatitis virus/measles virus. J. Virol. 88: 2195-2204.
3. Du, Y., et al. 2014. NFκB and enhancer-binding CREB protein scaffolded by CREB-binding protein (CBP)/p300 proteins regulate CD59 protein expression to protect cells from complement attack. J. Biol. Chem. 289: 2711-2724.
4. Wu, Y., et al. 2014. CD55 limits sensitivity to complement-dependent cytolysis triggered by heterologous expression of α-gal xenoantigen in colon tumor cells. Am. J. Physiol. Gastrointest. Liver Physiol. 306: G1056-G1064.
5. Ouyang, Q., et al. 2016. The membrane complement regulatory protein CD59 promotes tumor growth and predicts poor prognosis in breast cancer. Int. J. Oncol. 48: 2015-2024.
6. Jun, S.Y., et al. 2019. The positive correlation of TIPRL with LC3 and CD133 contributes to cancer aggressiveness: potential biomarkers for early liver cancer. Sci. Rep. 9: 16802.
7. Feng, Y., et al. 2020. Human desmoglein-2 and human CD46 mediate HAdV55 infection but human desmoglein-2 plays the major roles. J. Virol. 94: e00747-20.
8. Jun, S.Y., et al. 2021. The human TOR signaling regulator is the key indicator of liver cancer patients' overall survival: TIPRL/LC3/CD133/CD44 as potential biomarkers for early liver cancers. Cancers 13: 2925.
9. Ge, X., et al. 2021. Herbal NFκB inhibitors sensitize rituximab-resistant B lymphoma cells to complement-mediated cytolysis. Front. Oncol. 11: 751904.
10. Loeven, M.A., et al. 2021. Selective binding of heparin/heparan sulfate oligosaccharides to factor H and factor H-related proteins: therapeutic potential for C3 glomerulopathies. Front. Immunol. 12: 676662.
11. Lieber, A., et al. 2022. *In vivo* HSC transduction in rhesus macaques with an HDAd5/3+ vector targeting desmoglein 2 and transiently overexpressing cxcr4. Blood Adv. E-published.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.