SANTA CRUZ BIOTECHNOLOGY, INC.

CD59 (YTH53.1): sc-59095

BACKGROUND

CD59 is a GPI-anchored glycoprotein that is expressed on leukocytes, vascular endothelial cells, various epithelial cells and placenta. CD59 acts together with CD58 in mediating T cell adhesion and activation, and it may be a second ligand of CD2. CD59 functions as a regulator of the terminal pathway of complement by binding to the C8/C9 components of the assembling membrane attack complex (MAC) on host cell membranes, to stop the formation of the lytic pore. CD59 also drives both calcium release and activation of lipid-raft associated signalling molecules such as tyrosine kinases. CD59 gene has two p53-responsive domains that may be implicated in the defense of host cells from damage by the complement system in inflammation, suggesting that p53 could be used to mediate susceptibility of tumor cells to the complement lysis during chemotherapy.

CHROMOSOMAL LOCATION

Genetic locus: CD59 (human) mapping to 11p13; Cd59a (mouse) mapping to 2 E2.

SOURCE

CD59 (YTH53.1) is a rat monoclonal antibody raised against peripheral blood T cells of human origin.

PRODUCT

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

CD59 (YTH53.1) is available conjugated to agarose (sc-59095 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-59095 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59095 PE), fluorescein (sc-59095 FITC), Alexa Fluor® 488 (sc-59095 AF488), Alexa Fluor® 546 (sc-59095 AF546), Alexa Fluor® 594 (sc-59095 AF594) or Alexa Fluor® 647 (sc-59095 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59095 AF680) or Alexa Fluor® 790 (sc-59095 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CD59 (YTH53.1) is recommended for detection of CD59 of mouse, rat and 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 10-20 µl) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for CD59 siRNA (h): sc-37249, CD59 siRNA (m): sc-35014, CD59 shRNA Plasmid (h): sc-37249-SH, CD59 shRNA Plasmid (m): sc-35014-SH, CD59 shRNA (h) Lentiviral Particles: sc-37249-V and CD59 shRNA (m) Lentiviral Particles: sc-35014-V.

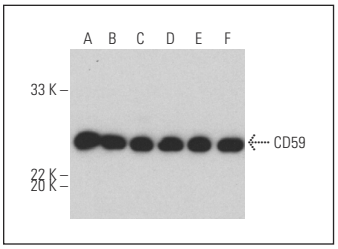
Molecular Weight of CD59: 20 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, ES-2 cell lysate: sc-24674 or Caki-1 cell lysate: sc-2224.

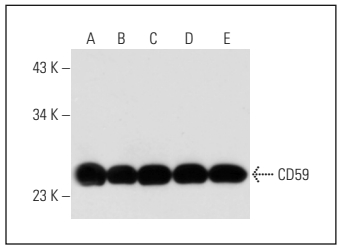
STORAGE

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

DATA



CD59 (YTH53.1) HRP: sc-59095 HRP. Direct western blot analysis of CD59 expression in ES-2 (**A**), U-937 (**B**), BJAB (**C**), Caki-1 (**D**), K-562 (**E**) and THP-1 (**F**) whole cell lysates.



CD59 (YTH53.1): sc-59095. Western blot analysis of CD59 expression in ES-2 (**A**), Caki-1 (**B**), U-937 (**C**), K-562 (**D**) and THP-1 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Tripodo, C., et al. 2009. P-selectin glycoprotein ligand-1 as a potential target for humoral immunotherapy of multiple myeloma. Curr. Cancer Drug Targets 9: 617-625.
2. 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.
3. Kwon, Y.C., et al. 2016. Distinct CD55 isoform synthesis and inhibition of complement-dependent cytolysis by hepatitis C virus. J. Immunol. 197: 1127-1136.
4. Wang, Y., et al. 2017. CD55 and CD59 expression protects HER2-overexpressing breast cancer cells from trastuzumab-induced complement-dependent cytotoxicity. Oncol. Lett. 14: 2961-2969.
5. Wang, Y., et al. 2018. Effect of membrane-bound complement regulatory proteins on tumor cell sensitivity to complement-dependent cytolysis triggered by heterologous expression of the α-gal xenoantigen. Oncol. Lett. 15: 9061-9068.
6. Kwon, Y.C. and Ray, R. 2019. Complement regulation and immune evasion by hepatitis C virus. Methods Mol. Biol. 1911: 337-347.
7. Bushey, R.T., et al. 2021. Complement factor H protects tumor cell-derived exosomes from complement-dependent lysis and phagocytosis. PLoS ONE 16: e0252577.
8. Zegallai, H.M., et al. 2022. Tafazzin deficiency in mouse mesenchymal stem cells promote reprogramming of activated B lymphocytes toward immunosuppressive phenotypes. FASEB J. 36: e22443.

RESEARCH USE

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