SANTA CRUZ BIOTECHNOLOGY, INC.

CAR (E1-1): sc-56892

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The coxsackie and adenovirus receptor (CAR) mediates viral infection by the binding of various adenoviruses through specific protein interactions. There is a high affinity between the viral knob domain and the extracellular amino terminal domain, designated D1, of CAR. The D1 domain alone is sufficient for knob binding in transfected cells. Determining the specific interactions between CAR and adenoviruses is imperative in order to further develop gene therapy using viral hosts. CAR is expressed in many human and murine cell types. However, cells that express CAR at low levels are not efficiently infected by adenoviruses. Possible methods of avoiding this problem in certain cell types are by either supplementing CAR or modifying the Ad knob to bind to other receptors.

REFERENCES

1. Dmitriev, I., et al. 1998. An adenovirus vector with genetically modified fibers demonstrates expanded tropism via utilization of a coxsackievirus and adenovirus receptor-independent cell entry mechanism. J. Virol. 72: 9706-9713.
2. Roelvink, P.W., et al. 1999. Identification of a conserved receptor-binding site on the fiber proteins of CAR-recognizing adenoviridae. Science 286: 1568-1571.
3. Bewley, M.C., et al. 1999. Structural analysis of the mechanism of adenovirus binding to its human cellular receptor, CAR. Science 286: 1579-1583.

CHROMOSOMAL LOCATION

Genetic locus: CXADR (human) mapping to 21q21.1.

SOURCE

CAR (E1-1) is a mouse monoclonal antibody raised against recombinant fusion protein consisting of the extracellular CAR-domain fused to the IgG_1-Fc domain of human origin.

PRODUCT

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

CAR (E1-1) is available conjugated to either phycoerythrin (sc-56892 PE) or fluorescein (sc-56892 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CAR (E1-1) is recommended for detection of CAR 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) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for CAR siRNA (h): sc-29906, CAR shRNA Plasmid (h): sc-29906-SH and CAR shRNA (h) Lentiviral Particles: sc-29906-V.

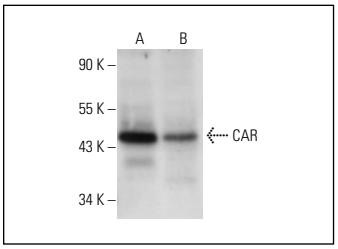
Molecular Weight of CAR: 46 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

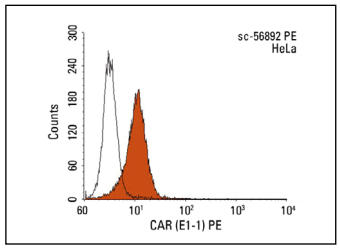
STORAGE

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

DATA



CAR (E1-1): sc-56892. Western blot analysis of CAR expression in HeLa (**A**) and A549 (**B**) whole cell lysates.



CAR (E1-1) PE: sc-56892 PE. FCM analysis of HeLa cells. Black line histogram represents the isotype control, normal mouse IgG_1-PE: sc-2866.

SELECT PRODUCT CITATIONS

1. Chang, C.C., et al. 2008. Oct-3/4 expression reflects tumor progression and regulates motility of bladder cancer cells. Cancer Res. 68: 6281-6291.
2. Lacher, M.D., et al. 2011. ZEB1 limits adenoviral infectability by transcriptionally repressing the coxsackie virus and adenovirus receptor. Mol. Cancer 10: 91.
3. Sharma, P., et al. 2012. Accessibility of the coxsackievirus and adenovirus receptor and its importance in adenovirus gene transduction efficiency. J. Gen. Virol. 93: 155-158.
4. Schlundt, A., et al. 2014. Structural basis for RNA recognition in roquin-mediated post-transcriptional gene regulation. Nat. Struct. Mol. Biol. 21: 671-678.
5. Abbink, P., et al. 2015. Construction and evaluation of novel rhesus monkey adenovirus vaccine vectors. J. Virol. 89: 1512-1522.
6. Lin, J., et al. 2017. Hepatocyte nuclear factor 1α downregulates HBV gene expression and replication by activating the NFκB signaling pathway. PLoS ONE 12: e0174017.
7. Liu, J., et al. 2018. Human adenovirus type 17 from species D transduces endothelial cells and human CD46 is involved in cell entry. Sci. Rep. 8: 13442.
8. Herrmann, L., et al. 2020. Naturally occurring variants in the transmembrane and cytoplasmic domains of the human Coxsackie- and adenovirus receptor have no impact on virus internalisation. Biochem. Biophys. Res. Commun. E-published.

RESEARCH USE

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

CONJUGATES

See **CAR (E-1): sc-373791** for CAR antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.