

CAR (3C100): sc-70493

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.
4. Freimuth, P., et al. 1999. Coxsackievirus and adenovirus receptor amino-terminal immunoglobulin V-related domain binds adenovirus type 2 and fiber knob from adenovirus type 12. *J. Virol.* 73: 1392-1398.
5. Hidaka, C., et al. 1999. CAR-dependent and CAR-independent pathways of adenovirus vector-mediated gene transfer and expression in human fibroblasts. *J. Clin. Invest.* 103: 579-587.
6. Kirby, I., et al. 2000. Identification of contact residues and definition of the CAR-binding site of adenovirus type 5 fiber protein. *J. Virol.* 74: 2804-2813.

CHROMOSOMAL LOCATION

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

SOURCE

CAR (3C100) is a mouse monoclonal antibody raised against recombinant fusion protein consisting of the extracellular CAR-domain fused to the IgG₁-Fc domain of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

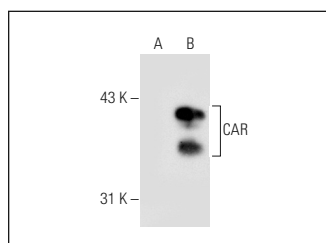
CAR (3C100) is recommended for detection of CAR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ 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.

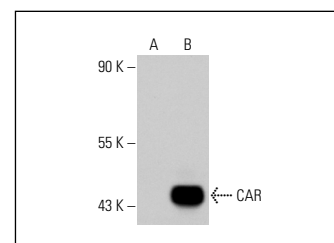
Molecular Weight of CAR: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, CAR (h): 293 Lysate: sc-110476 or A549 cell lysate: sc-2413.

DATA



CAR (3C100): sc-70493. Western blot analysis of CAR expression in non-transfected: sc-111760 (A) and human CAR transfected: sc-110476 (B) 293 whole cell lysates.




CAR (3C100): sc-70493. Western blot analysis of CAR expression in non-transfected: sc-110760 (A) and human CAR transfected: sc-112300 (B) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Gonzalez, G., et al. 2012. Microparticle-mediated transfer of the viral receptors CAR and CD46, and the CFTR channel in a CHO cell model confers new functions to target cells. *PLoS ONE* 7: e52326.
2. Montiel, N.A., et al. 2013. Time-dependent biodistribution and transgene expression of a recombinant human adenovirus serotype 5-luciferase vector as a surrogate for rAd5-FMDV vaccines in cattle. *Vet. Immunol. Immunopathol.* 151: 37-48.
3. Abbink, P., et al. 2015. Construction and evaluation of novel rhesus monkey adenovirus vaccine vectors. *J. Virol.* 89: 1512-1522.
4. Farkas, T., et al. 2019. The coxsackievirus and adenovirus receptor, a required host factor for reovirus infection, is a putative enteric calicivirus receptor. *J. Virol.* 93: e00869-19.

RESEARCH USE

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



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.