SANTA CRUZ BIOTECHNOLOGY, INC.

CD83 (F-5): sc-55535

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CD83 is a heavily glycosylated membrane protein of the immunoglobulin (Ig) superfamily that is expressed in mature dendritic cells, Langerhans cells and interdigitating reticulum cells within lymphoid tissues. Structurally, CD83 resembles other Ig superfamily members, which have an extracellular V-type Ig-like domain, a single transmembrane domain and a 40 residue cytoplasmic tail. CD83 expression is used as a marker for mature, antigen presenting dendritic cells that are capable of generating tumor-specific T cell immunity, a phenotype with implications as an anti-cancer vaccine. CD83-IgG_1(fc) chimera studies indicate that CD83 is a sialic acid-binding, Ig-like lectin (siglec) adhesion molecule that is involved in cell adhesion/signaling by hosting dendritic cell interactions with monocytes and $CD8^+$ T cells.

CHROMOSOMAL LOCATION

Genetic locus: CD83 (human) mapping to 6p23; Cd83 (mouse) mapping to 13 A4.

SOURCE

CD83 (F-5) is a mouse monoclonal antibody raised against amino acids 7-205 mapping at the C-terminus of CD83 of human origin.

PRODUCT

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

CD83 (F-5) is available conjugated to agarose (sc-55535 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55535 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55535 PE), fluorescein (sc-55535 FITC), Alexa Fluor® 488 (sc-55535 AF488), Alexa Fluor® 546 (sc-55535 AF546), Alexa Fluor® 594 (sc-55535 AF594) or Alexa Fluor® 647 (sc-55535 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55535 AF680) or Alexa Fluor® 790 (sc-55535 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CD83 (F-5) is recommended for detection of CD83 of mouse, rat and human origin by Western Blotting (starting dilution 1:1000, dilution range 1:1000-1:5000), 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CD83 siRNA (h): sc-42808, CD83 siRNA (m): sc-42809, CD83 shRNA Plasmid (h): sc-42808-SH, CD83 shRNA Plasmid (m): sc-42809-SH, CD83 shRNA (h) Lentiviral Particles: sc-42808-V and CD83 shRNA (m) Lentiviral Particles: sc-42809-V.

Molecular Weight of CD83 precursor: 32 kDa.

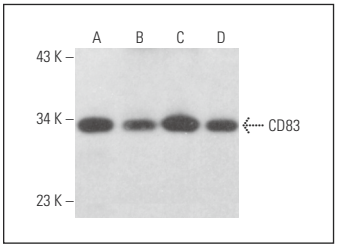
Molecular Weight of glycosylated CD83: 45-60 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, CCRF-CEM cell lysate: sc-2225 or Jurkat whole cell lysate: sc-2204.

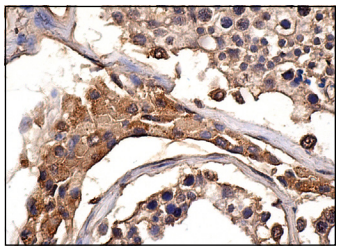
STORAGE

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

DATA



CD83 (F-5): sc-55535. Western blot analysis of CD83 expression in K-562 (**A**), Jurkat (**B**), MOLT-4 (**C**) and CCRF-CEM (**D**) whole cell lysates.



CD83 (F-5): sc-55535. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing membrane staining of cells in seminiferous ducts and cytoplasmic staining of Leydig cells.

SELECT PRODUCT CITATIONS

1. Chemnitz, J., et al. 2010. The karyopherin CRM1 is required for dendritic cell maturation. Immunobiology 215: 370-379.
2. Heilingloh, C.S., et al. 2014. Herpes simplex virus type 1 ICP0 induces CD83 degradation in mature dendritic cells independent of its E3 ubiquitin ligase function. J. Gen. Virol. 95: 1366-1375.
3. Heilingloh, C.S., et al. 2015. L particles transmit viral proteins from herpes simplex virus 1-infected mature dendritic cells to uninfected bystander cells, inducing CD83 downmodulation. J. Virol. 89: 11046-11055.
4. Ju, X., et al. 2016. The analysis of CD83 expression on human immune cells identifies a unique $CD83^+$-activated T cell population. J. Immunol. 197: 4613-4625.
5. Heilingloh, C.S., et al. 2017. The major immediate-early protein IE2 of human cytomegalovirus is sufficient to induce proteasomal degradation of CD83 on mature dendritic cells. Front. Microbiol. 8: 119.
6. Li, Z., et al. 2018. CD83 is a new potential biomarker and therapeutic target for Hodgkin lymphoma. Haematologica 103: 655-665.
7. Wild, A.B., et al. 2019. CD83 orchestrates immunity toward self and non-self in dendritic cells. JCI Insight 4: e126246.
8. Grosche, L., et al. 2020. Herpes simplex virus type-2 paralyzes the function of monocyte-derived dendritic cells. Viruses 12: 112.
9. Ma, N., et al. 2021. Influenza neuraminidase engages CD83 and promotes pulmonary injury. J. Virol. 95: e01753-20.
10. Bolognesi, M.M., et al. 2021. Antibodies validated for routinely processed tissues stain frozen sections unpredictably. Biotechniques 70: 137-148.

RESEARCH USE

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