SANTA CRUZ BIOTECHNOLOGY, INC.

WC1 (CC115): sc-101843

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Workshop cluster 1 (WC1) molecules are transmembrane glycoproteins that are members of the scavenger receptor cysteine-rich (SRCR) large, multigene family and are uniquely expressed on γδ T cells. γδ T cells that express WC1 comprise a large proportion of circulating lymphocytes, suggesting these cells are biologically relevant as well as functionally different from αβ T cells. WC1 isoforms WC1.1, WC1.2 and WC1.3 are each expressed on discrete subpopulations of γδ T cells that play distinct roles in immune responses. WC1 proteins may play a role in augmenting cellular activation and inducing cell cycle arrest in γδ T cells. WC1 is a surface protein that has a conserved signaling motifs in the cytoplasmic tail implicating its function as an accessory molecule. Through a signaling pathway, WC1 affects cell fate via increases in cellular ceramide.

REFERENCES

1. Kirkham, P.A., et al. 2000. Ligation of the WC1 receptor induces γδ T cell growth arrest through fumonisin B1-sensitive increases in cellular ceramide. J. Immunol. 165: 3564-3570.
2. Smyth, A.J., et al. 2001. *In vitro* responsiveness of γδ T cells from *Mycobacterium bovis*-infected cattle to mycobacterial antigens: predominant involvement of WC1$^+$ cells. Infect. Immun. 69: 89-96.
3. Sopp, P., et al. 2001. IFN γ and IL-4 production by CD4, CD8 and WC1 from cattle lymph nodes and blood. Vet. Immunol. Immunopathol. 81: 85-96.
4. Ahn, J.S., et al. 2002. Scavenger receptor cysteine-rich domains 9 and 11 of WC1 are receptors for the WC1 counter receptor. J. Leukoc. Biol. 72: 382-390.
5. Rogers, A.N., et al. 2005. γδ T cell function varies with the expressed WC1 co-receptor. J. Immunol. 174: 3386-3393.
6. Wangoo, A., et al. 2005. Advanced granulomatous lesions in *Mycobacterium bovis*-infected cattle are associated with increased expression of type I procollagen, γδ (WC1$^+$) T cells and CD 68$^+$ cells. J. Comp. Pathol. 133: 223-234.
7. Blumerman, S.L., et al. 2006. Differential TCR gene usage between WC1$^-$ and WC1$^+$ ruminant γδ T cell subpopulations including those responding to bacterial antigen. Immunogenetics 58: 680-692.
8. Lahmers, K.K., et al. 2006. Comparative gene expression by WC1$^+$ γδ and CD4$^+$ αβ T lymphocytes which respond to Anaplasma marginale, demonstrates higher expression of chemokin cell-associated genes by WC1$^+$ γδ T cells. J. Leukoc. Biol. 80: 939-952.
9. Rogers, A.N., et al. 2006. Characterization of WC1 co-receptors on functionally distinct subpopulations of ruminant γδ T cells. Cell. Immunol. 239: 151-161.

SOURCE

WC1 (CC115) is a mouse monoclonal antibody raised against thymocytes of bovine origin.

RESEARCH USE

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

PRODUCT

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

WC1 (CC115) is available conjugated to agarose (sc-101843 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-101843 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-101843 PE), fluorescein (sc-101843 FITC), Alexa Fluor® 488 (sc-101843 AF488), Alexa Fluor® 546 (sc-101843 AF546), Alexa Fluor® 594 (sc-101843 AF594) or Alexa Fluor® 647 (sc-101843 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-101843 AF680) or Alexa Fluor® 790 (sc-101843 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

WC1 (CC115) is recommended for detection of WC1 of ovine and caprine 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).

Molecular Weight of WC1: 215 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

STORAGE

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

PROTOCOLS

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