SANTA CRUZ BIOTECHNOLOGY, INC.

SC (C-2): sc-374343

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Polymeric IgA and IgM is produced and secreted by B cells in the lamina propria, which is beneath the mucosal lining of polarized epithelial cells. Polymeric immunoglobulin receptors, also designated pIgRs, are expressed on the basolateral surface of glandular epithelia and mediate transcellular transport of secretory immunoglobulin polymers across the epithelium. pIgR associates with secreted dimeric IgA and IgM molecules. During transcellular transport of these Ig polymers, pIgR undergoes proteolytic cleavage to generate a fragment called secretory component (SC), polymeric immunoglobulin receptor or poly-IG receptor. When immunoglobulin polymers associate with SC, they become resistant to enzymatic degradation during the transcytosis process. SC and the pIgR are crucial for proper mucosal immunity, where they represent a molecular chaperone for polymeric Igs to remain intact and enter into body fluids. The human SC (pIgR) gene maps to chromosome 1q32.1 and encodes a 764 amino acid protein. The receptor contains five units with homology to the variable (V) units of immunoglobulins and a transmembrane region that shares homology to certain immunoglobulin variable regions.

REFERENCES

1. Kühn, L.C., et al. 1979. Role of secretory component, a secreted of IgA dimer by epithelial cells. J. Biol. Chem. 254: 11072-11081.
2. Nagura, H., et al. 1980. Secretory component in immmunoglobulin deficiency: and immunoelectron microscopic study of intestinal epithelium. Scand. J. Immunol. 12: 359-363.

CHROMOSOMAL LOCATION

Genetic locus: PIGR (human) mapping to 1q32.1; Pigr (mouse) mapping to 1 E4.

SOURCE

SC (C-2) is a mouse monoclonal antibody raised against amino acids 465-764 mapping at the C-terminus of SC of human origin.

PRODUCT

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

SC (C-2) is available conjugated to agarose (sc-374343 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374343 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374343 PE), fluorescein (sc-374343 FITC), Alexa Fluor® 488 (sc-374343 AF488), Alexa Fluor® 546 (sc-374343 AF546), Alexa Fluor® 594 (sc-374343 AF594) or Alexa Fluor® 647 (sc-374343 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374343 AF680) or Alexa Fluor® 790 (sc-374343 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

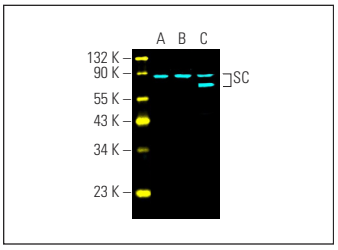
SC (C-2) is recommended for detection of SC of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SC siRNA (h): sc-42964, SC siRNA (m): sc-42965, SC shRNA Plasmid (h): sc-42964-SH, SC shRNA Plasmid (m): sc-42965-SH, SC shRNA (h) Lentiviral Particles: sc-42964-V and SC shRNA (m) Lentiviral Particles: sc-42965-V.

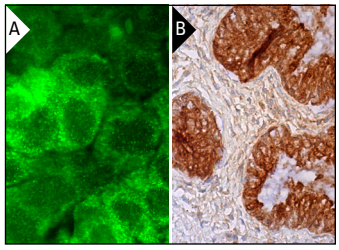
Molecular Weight of SC: 80 kDa.

Positive Controls: DU 145 cell lysate: sc-2268, AN3 CA cell lysate: sc-24662 or c4 whole cell lysate: sc-364186.

DATA



SC (C-2) Alexa Fluor® 647: sc-374343 AF647. Direct fluorescent western blot analysis of SC expression in DU 145 (**A**), AN3 CA (**B**) and c4 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 488: sc-516790.



SC (C-2): sc-374343. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human uterine cervix tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Mao, X., et al. 2020. Crude polysaccharides from the seeds of *Vaccaria segetalis* prevent the urinary tract infection through the stimulation of kidney innate immunity. J. Ethnopharmacol. 260: 112578.
2. Yang, Y., et al. 2020. IgA targeting on N-terminal moiety of viral phosphoprotein prevents measles virus from evading interferon β signaling. ACS Infect. Dis. 6: 844-856.
3. Gong, Y., et al. 2021. G protein-coupled receptor 109A maintains the intestinal integrity and protects against ETEC mucosal infection by promoting IgA secretion. Front. Immunol. 11: 583652.
4. Fan, X., et al. 2021. Rab11-FIP1 and Rab11-FIP5 regulate pIgR/pIgA transcytosis through TRIM21-mediated polyubiquitination. Int. J. Mol. Sci. 22: 10466.
5. Morales-Magaña, J., et al. 2022. Cholecystokinin outcome on markers of intestinal IgA antibody response. Curr. Issues Mol. Biol. 44: 2542-2553.

RESEARCH USE

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