SANTA CRUZ BIOTECHNOLOGY, INC.

FcRn (A-6): sc-393064

BACKGROUND

FcRN present in the intestinal epithelium of neonatal mice and rats mediates the selective uptake of immunoglobulin G (IgG) in mothers' milk, thereby helping newborn animals to acquire passive immunity. FcRn (also designated FCGRT, Brambell receptor, FcRn α chain, IgG Gc receptor and neonatal Fc-receptor) is comprised of a heavy chain and β-2-Microglobulin. FcRn heavy chain shows approximately 35% amino acid identity to an MHC class I molecule. FcRN localizes in endosomes of vascular endothelial cells and selectively recycles IgG to the cell surface, thus protecting IgG from lysosomal catabolism. This protection mechanism is a major constituent for ensuring IgG are the longest lived of all plasma proteins.

REFERENCES

1. Claypool, S.M., et al. 2002. Functional reconstitution of human FcRn in Madin-Darby canine kidney cells requires co-expressed human β-2-Microglobulin. J. Biol. Chem. 277: 28038-28050.
2. Praetor, A., et al. 2002. Membrane-anchored human FcRn can oligomerize in the absence of IgG. J. Mol. Biol. 321: 277-284.
3. Detmer, S.A., et al. 2002. IgG transcytosis and recycling by FcRn expressed in MDCK cells reveals ligand-induced redistribution. EMBO J. 21: 5953.
4. Zhou, J., et al. 2003. Generation of mutated variants of the human form of the MHC class I-related receptor, FcRn, with increased affinity for mouse immunoglobulin G. J. Mol. Biol. 332: 901-913.
5. Ober, R.J., et al. 2004. Visualizing the site and dynamics of IgG salvage by the MHC class I-related receptor, FcRn. J. Immunol. 172: 2021-2029.

CHROMOSOMAL LOCATION

Genetic locus: Fcgrt (mouse) mapping to 7 B4.

SOURCE

FcRn (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 149-172 within an internal region of FcRn of mouse 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.

FcRn (A-6) is available conjugated to agarose (sc-393064 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393064 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393064 PE), fluorescein (sc-393064 FITC), Alexa Fluor® 488 (sc-393064 AF488), Alexa Fluor® 546 (sc-393064 AF546), Alexa Fluor® 594 (sc-393064 AF594) or Alexa Fluor® 647 (sc-393064 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393064 AF680) or Alexa Fluor® 790 (sc-393064 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393064 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

FcRn (A-6) is recommended for detection of FcRn of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for FcRn siRNA (m): sc-45633, FcRn shRNA Plasmid (m): sc-45633-SH and FcRn shRNA (m) Lentiviral Particles: sc-45633-V.

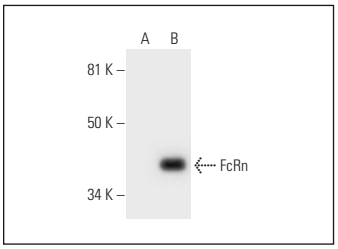
Molecular Weight of FcRn: 46 kDa.

Positive Controls: FcRn (m): 293T Lysate: sc-126843.

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.

DATA



FcRn (A-6): sc-393064. Western blot analysis of FcRn expression in non-transfected: sc-117752 (**A**) and mouse FcRn transfected: sc-126843 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Surnar, B., et al. 2019. Orally administrable therapeutic synthetic nanoparticle for Zika virus. ACS Nano 13: 11034-11048.
2. Dahlke, E., et al. 2022. Megalin orchestrates FcRn endocytosis and trafficking. Cells 12: 53.

STORAGE

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

RESEARCH USE

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