SANTA CRUZ BIOTECHNOLOGY, INC.

FcRn (B-8): sc-271745

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: FCGRT (human) mapping to 19q13.33.

SOURCE

FcRn (B-8) is a mouse monoclonal antibody raised against amino acids 24-297 mapping within an N-terminal extracellular domain of FcRn of human origin.

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.

FcRn (B-8) is available conjugated to agarose (sc-271745 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271745 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271745 PE), fluorescein (sc-271745 FITC), Alexa Fluor® 488 (sc-271745 AF488), Alexa Fluor® 546 (sc-271745 AF546), Alexa Fluor® 594 (sc-271745 AF594) or Alexa Fluor® 647 (sc-271745 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271745 AF680) or Alexa Fluor® 790 (sc-271745 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

FcRn (B-8) is recommended for detection of FcRn of 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 FcRn siRNA (h): sc-45632, FcRn shRNA Plasmid (h): sc-45632-SH and FcRn shRNA (h) Lentiviral Particles: sc-45632-V.

Molecular Weight of FcRn: 46 kDa.

Positive Controls: COLO 205 whole cell lysate: sc-364177, AN3 CA cell lysate: sc-24662 or HEL 92.1.7 cell lysate: sc-2270.

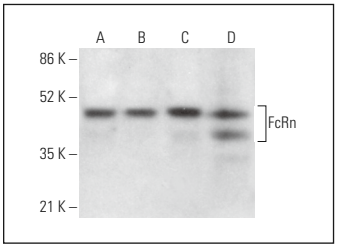
RESEARCH USE

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

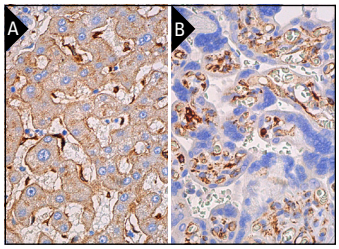
STORAGE

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

DATA



FcRn (B-8): sc-271745. Western blot analysis of FcRn expression in COLO 205 (**A**), RD (**B**), AN3 CA (**C**) and HEL 92.1.7 (**D**) whole cell lysates.



FcRn (B-8): sc-271745. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing membrane and cytoplasmic staining of hepatocytes and membrane and cytoplasmic staining of subset of sinusoidal endothelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of hofbauer cells (**B**).

SELECT PRODUCT CITATIONS

1. den Hartog, G., et al. 2013. The mucosal factors retinoic acid and TGF-β1 induce phenotypically and functionally distinct dendritic cell types. Int. Arch. Allergy Immunol. 162: 225-236.
2. Fujimoto, K., et al. 2015. Intracellular dynamics and fate of a humanized anti-interleukin-6 receptor monoclonal antibody, tocilizumab. Mol. Pharmacol. 88: 660-675.
3. Swiercz, R., et al. 2017. Loss of expression of the recycling receptor, FcRn, promotes tumor cell growth by increasing albumin consumption. Oncotarget 8: 3528-3541.
4. Liu, X., et al. 2019. Human cytomegalovirus evades antibody-mediated immunity through endoplasmic reticulum-associated degradation of the FcRn receptor. Nat. Commun. 10: 3020.
5. Toh, W.H., et al. 2019. FcRn mediates fast recycling of endocytosed albumin and IgG from early macropinosomes in primary macrophages. J. Cell Sci. 133: jcs235416.
6. Chernyavsky, A., et al. 2020. Mechanisms of synergy of autoantibodies to M3 muscarinic acetylcholine receptor and secretory pathway Ca^{2+}/Mn^{2+}-ATPase isoform 1 in patients with non-desmoglein pemphigus vulgaris. Int. Immunopharmacol. 80: 106149.
7. Clements, T., et al. 2020. Update on transplacental transfer of IgG subclasses: impact of maternal and fetal factors. Front. Immunol. 11: 1920.
8. Cejas, R.B., et al. 2021. Analysis of the intracellular traffic of IgG in the context of Down syndrome (trisomy 21). Sci. Rep. 11: 10981.

PROTOCOLS

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