

FcRn (K-12): sc-46328

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.
6. Ober, R.J., et al. 2004. Exocytosis of IgG as mediated by the receptor, FcRn: an analysis at the single-molecule level. *Proc. Natl. Acad. Sci. USA* 101: 11076-11081.

CHROMOSOMAL LOCATION

Genetic locus: FCGRT (human) mapping to 19q13.33; Fcgrt (mouse) mapping to 7 B4.

SOURCE

FcRn (K-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of FcRn of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46328 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

FcRn (K-12) is recommended for detection of FcRn of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 (h): sc-45632, FcRn siRNA (m): sc-45633, FcRn shRNA Plasmid (h): sc-45632-SH, FcRn shRNA Plasmid (m): sc-45633-SH, FcRn shRNA (h) Lentiviral Particles: sc-45632-V and FcRn shRNA (m) Lentiviral Particles: sc-45633-V.

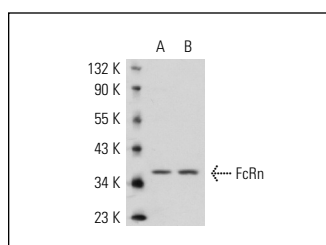
Molecular Weight of FcRn: 46 kDa.

Positive Controls: ES-2 cell lysate: sc-24674, JEG-3 whole cell lysate: sc-364255 or rat skeletal muscle extract: sc-364810.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



FcRn (K-12): sc-46328. Western blot analysis of FcRn expression in JEG-3 (A) and ES-2 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chang, A.M., et al. 2012. Albumin-induced apoptosis of glomerular parietal epithelial cells is modulated by extracellular signal-regulated kinase 1/2. *Nephrol. Dial. Transplant.* 27: 1330-1343.
2. Gan, H., et al. 2012. Neonatal Fc receptor stimulation induces ubiquitin c-terminal hydrolase-1 overexpression in podocytes through activation of p38 mitogen-activated protein kinase. *Hum. Pathol.* 43: 1482-1490.