SANTA CRUZ BIOTECHNOLOGY, INC.

FcRn (E-12): sc-46327

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.

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.
7. Zhou, J., et al. 2005. Conferring the binding properties of the mouse MHC class I-related receptor, FcRn, onto the human ortholog by sequential rounds of site-directed mutagenesis. J. Mol. Biol. 345: 1071-1081.

CHROMOSOMAL LOCATION

Genetic locus: Fcgrt (mouse) mapping to 7 B3.

SOURCE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-46327 P, (100 µg 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.

APPLICATIONS

FcRn (E-12) is recommended for detection of FcRn of mouse and rat 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 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.

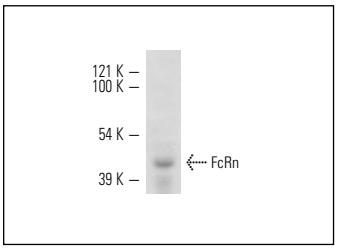
Molecular Weight of FcRn: 46 kDa.

Positive Controls: 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 (E-12): sc-46327. Western blot analysis of FcRn expression in rat skeletal muscle tissue extract.

RESEARCH USE

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

PROTOCOLS

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

MONOS Satisfaction Guaranteed

Try **FcRn (A-6): sc-393064** or **FcRn (H-4): sc-166413**, our highly recommended monoclonal aternatives to FcRn (E-12).