SANTA CRUZ BIOTECHNOLOGY, INC.

Lambda 5 (G-12): sc-398037

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The Power to Question

BACKGROUND

Lambda 5 (also called immunoglobulin λ-like polypeptide 1 or CD179b antigen) and VpreB comprise the surrogate light chain of the pre-B cell receptor complex. SL chain is also part of a quality control mechanism that tests a μ-chain for its ability to pair with conventional L chains. It can form Ig-like complexes with the heavy (H) chain, the DHJHC μ-protein or the p55 chain. Production of the surrogate light chain begins at the stage of pro-B cells, continues during the pre-B cell stage and halts at the immature B cell stage. Once pre-BCR is expressed, SL chain expression is turned off. As pre-B II cells proliferate, SL is diluted out, thus limiting pre-BCR formation. Lambda 5 is critical for B cell development in mammals. Expression of Lambda 5 is highest in liver, pre-B-lymphocytes and bone marrow, the major source of B cell precursors.

REFERENCES

1. Hollis, G., et al. 1989. Immunoglobulin λ light-chain-related genes 14.1 and 16.1 are expressed in pre-B cells and may encode the human immunoglobulin ω light-chain protein. Proc. Natl. Acad. Sci. USA 86: 5552-5556.
2. Bossy, D., et al. 1991. Organization and expression of the λ-like genes that contribute to the μ-ψ light chain complex in human pre-B cells. Int. Immunol. 11: 1081-1090.
3. Mai, S., et al. 1995. The c-Myc protein represses the Lambda 5 and TdT initiators. Nucleic Acids Res. 23: 1-9.
4. Corcos, D., et al. 1995. Pre-B cell development in the absence of Lambda 5 in transgenic mice expressing a heavy-chain disease protein. Curr. Biol. 5: 1140-1148.
5. Minegishi, Y., et al. 1998. Mutations in the human Lambda 5/14.1 gene result in B cell deficiency and agammaglobulinemia. J. Exp. Med. 187: 71-77.
6. Donohoe, M.E., et al. 2000. Transgenic human Lambda 5 rescues the murine Lambda 5 nullizygous phenotype. J. Immunol. 164: 5269-5276.
7. Bradl, H., et al. 2003. Interaction of murine precursor B cell receptor with stroma cells is controlled by the unique tail of Lambda 5 and stroma cell-associated heparan sulfate. J. Immunol. 171: 2338-2348.
8. Schuh, W., et al. 2003. Cutting edge: signaling and cell surface expression of a μH chain in the absence of Lambda 5: a paradigm revisited. J. Immunol. 171: 3343-3347.

CHROMOSOMAL LOCATION

Genetic locus: Igll1 (mouse) mapping to 16 A3.

SOURCE

Lambda 5 (G-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 31-56 at the N-terminus of Lambda 5 of mouse origin.

RESEARCH USE

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

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.

Blocking peptide available for competition studies, sc-398037 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Lambda 5 (G-12) is recommended for detection of Lambda 5 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 Lambda 5 siRNA (m): sc-44544, Lambda 5 shRNA Plasmid (m): sc-44544-SH and Lambda 5 shRNA (m) Lentiviral Particles: sc-44544-V.

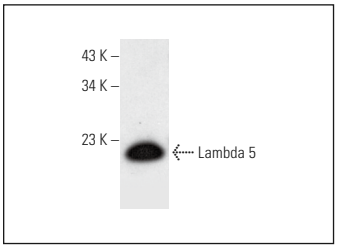
Molecular Weight of Lambda 5: 22 kDa.

Positive Controls: NFS-25 C-3 whole cell lysate: sc-364787 or NFS-70 whole cell lysate.

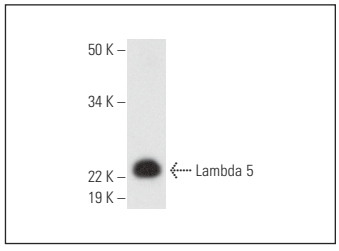
RECOMMENDED SUPPORT REAGENTS

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



Lambda 5 (G-12): sc-398037. Western blot analysis of Lambda 5 expression in NFS-70 whole cell lysate.



Lambda 5 (G-12): sc-398037. Western blot analysis of Lambda 5 expression in NFS-25 C-3 whole cell lysate.

STORAGE

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