SANTA CRUZ BIOTECHNOLOGY, INC.

α-lactalbumin (F20.16): sc-53151

BACKGROUND

α-lactalbumin is the B protein of lactose synthetase secreted by the mammary epithelial cells. It is a potent Ca^{2+}-elevating and apoptosis-inducing agent with broad, yet selective, cytotoxic activity. Multimeric α-lactalbumin has been shown to kill all transformed, embryonic and lymphoid cells tested, but not mature epithelial elements. This suggests that milk contributes to mucosal immunity not only by furnishing antimicrobial molecules but also by policing the function of lymphocytes and epithelium. α-lactalbumin may be helpful in discovering the site of origin of metastatic breast tumors. Human lactalbumin contains 123 amino acid residues. Comparison of the 5' flanking sequences of the two α-lactalbumin genes with those of five casein genes reveals the presence of a highly conserved region extending from position -140 to -110 in all seven sequences examined, suggesting a possible regulatory role in the hormonal control or tissue-specific expression of milk protein genes in the mammary gland.

REFERENCES

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3. Anema, S.G., et al. 2006. Effect of protein, nonprotein-soluble components, and lactose concentrations on the irreversible thermal denaturation of β-lactoglobulin and α-lactalbumin in skim milk. J. Agric. Food Chem. 54: 7339-7348.
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5. Biziulevicius, G.A., et al. 2006. Food-protein enzymatic hydrolysates possess both antimicrobial and immunostimulatory activities: a "cause and effect" theory of bifunctionality. FEMS. Immunol. Med. Microbiol. 46: 131-138.
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7 Ohrvik, H., et al. 2006. Cadmium-induced disturbances in lactating mammary glands of mice. Toxicol. Lett. 164: 207-213.
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CHROMOSOMAL LOCATION

Genetic locus: LALBA (human) mapping to 12q13.11.

SOURCE

α-lactalbumin (F20.16) is a mouse monoclonal antibody raised against purified α-lactalbumin of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

α-lactalbumin (F20.16) is recommended for detection of α-lactalbumin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 α-lactalbumin siRNA (h): sc-72407, α-lactalbumin shRNA Plasmid (h): sc-72407-SH and α-lactalbumin shRNA (h) Lentiviral Particles: sc-72407-V.

Molecular Weight of α-lactalbumin: 14 kDa.

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) 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.

SELECT PRODUCT CITATIONS

1. Jin, H. and Zangar, R.C. 2012. High-throughput, multiplexed analysis of 3-nitrotyrosine in individual proteins. Curr. Protoc. Toxicol. 17: Unit 17.

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.

PROTOCOLS

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