SANTA CRUZ BIOTECHNOLOGY, INC.

α-lactalbumin (A-2): sc-393582

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

1. Burchell, J., et al. 1985. Production and characterization of monoclonal antibodies to human casein. A monoclonal antibody that cross-reacts with casein and α-lactalbumin. Hybridoma 4: 341-350.
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3. Barros, R.M., et al. 2006. Molecular characterization of peptides released from β-lactoglobulin and α-lactalbumin via cardosins A and B. J. Dairy Sci. 89: 483-494.
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5. Huppertz, T., et al. 2006. High pressure-induced changes in bovine milk proteins: a review. Biochim. Biophys. Acta 1764: 593-598.
6. Ohrvik, H., et al. 2006. Cadmium-induced disturbances in lactating mammary glands of mice. Toxicol. Lett. 164: 207-213.
7. Wang, Q., et al. 2006. Quantitative assessment of thermal denaturation of bovine α-lactalbumin via low-intensity ultrasound, HPLC, and DSC. J. Agric. Food Chem. 54: 6501-6506.
8. Xiao, Y., et al. 2006. Protein instability during HIC: describing the effects of mobile phase conditions on instability and chromatographic retention. Biotechnol. Bioeng. 93: 1177-1189.
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CHROMOSOMAL LOCATION

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

RESEARCH USE

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

SOURCE

α-lactalbumin (A-2) is a mouse monoclonal antibody raised against amino acids 1-142 representing full length α-lactalbumin of human origin.

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.

APPLICATIONS

α-lactalbumin (A-2) is recommended for detection of α-lactalbumin 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) 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.

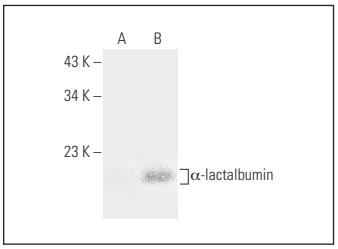
Molecular Weight of α-lactalbumin: 14 kDa.

Positive Controls: human α-lactalbumin transfected HEK293T whole cell lysate or human breast extract: sc-363753.

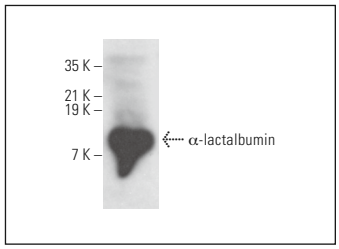
RECOMMENDED SUPPORT REAGENTS

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



α-lactalbumin (A-2): sc-393582. Western blot analysis of α-lactalbumin expression in non-transfected (**A**) and human α-lactalbumin transfected (**B**) HEK293T whole cell lysates.



α-lactalbumin (A-2): sc-393582. Western blot analysis of α-lactalbumin expression in human breast tissue extract.

STORAGE

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