

β-casein (S-15): sc-17969

BACKGROUND

Milk proteins are crucial for the development of all newborn mammals and caseins constitute the major proteins in mammalian milk. β- and κ-caseins are the only caseins present in human milk. The β-casein/κ-casein ratio is higher in colostrum than in transitional and mature milk and is related to a better digestibility of colostrum casein micelles by the neonate during the first days of life. Human β-casein-encoding gene (*Bca*) contains a highly phosphorylated site, which is responsible for the calcium-binding capacity of β-casein. A common set of transcription factors are required for the expression of β-casein. Multiple binding sites for Stat5, C/EBPβ (CCAAT/enhancer-binding protein) and several half-sites for glucocorticoid receptor (GR) are identified in the distal human enhancer of the β-casein gene. β-casein gene transcription is regulated primarily by a composite response element (CoRE), which integrates signaling from the lactogenic hormones PRL, Insulin and hydrocortisone in mammary epithelial cells. NFκB functions as a negative regulator of β-casein gene expression during pregnancy by interfering with Stat5 tyrosine phosphorylation.

CHROMOSOMAL LOCATION

Genetic locus: *Csn2* (mouse) mapping to 5 E1.

SOURCE

β-casein (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of β-casein 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-17969 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

β-casein (S-15) is recommended for detection of β-casein of mouse and, to a lesser extent, 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 β-casein siRNA (m): sc-40385, β-casein shRNA Plasmid (m): sc-40385-SH and β-casein shRNA (m) Lentiviral Particles: sc-40385-V.

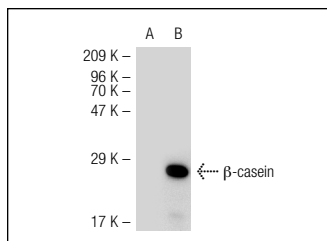
Molecular Weight of β-casein: 29 kDa.

Positive Controls: β-casein (m): 293T Lysate: sc-119005.

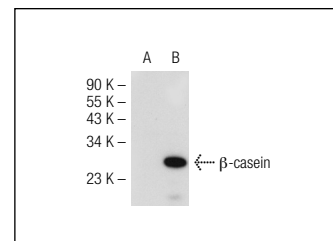
RESEARCH USE

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

DATA



β-casein (S-15): sc-17969. Western blot analysis of β-casein expression in non-transfected: sc-117752 (A) and mouse β-casein transfected: sc-119008 (B) 293T whole cell lysates.



β-casein (S-15): sc-17969. Western blot analysis of β-casein expression in non-transfected: sc-117752 (A) and mouse β-casein transfected: sc-119005 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Shekar, P.C., et al. 2006. κ-casein-deficient mice fail to lactate. *Proc. Natl. Acad. Sci. USA* 103: 8000-8005.
- Loladze, A.V., et al. 2006. Epithelial-specific and stage-specific functions of Insulin-like growth factor-I during postnatal mammary development. *Endocrinology* 147: 5412-5423.
- Sun, Z., et al. 2011. Decreased IGF type 1 receptor signaling in mammary epithelium during pregnancy leads to reduced proliferation, alveolar differentiation, and expression of Insulin receptor substrate IRS-1 and IRS-2. *Endocrinology* 152: 3233-3245.
- Fini, M.A., et al. 2011. Contribution of xanthine oxidoreductase to mammary epithelial and breast cancer cell differentiation in part modulates inhibitor of differentiation-1. *Mol. Cancer Res.* 9: 1242-1254.
- Li, M., et al. 2012. Atbf1 regulates pubertal mammary gland development likely by inhibiting the pro-proliferative function of estrogen-ER signaling. *PLoS ONE* 7: e51283.

PROTOCOLS

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