SANTA CRUZ BIOTECHNOLOGY, INC.

β-casein (M-14): sc-17971

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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/enchancer-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 (M-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus 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-17971 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.

PROTOCOLS

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

APPLICATIONS

β-casein (M-14) is recommended for detection of β-casein of mouse 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).

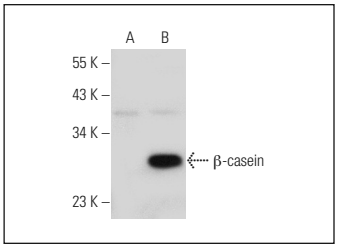
Suitable for use as control antibody for β-casein siRNA (m): sc-40385, β-casein shRNA Plasmid (m): sc-40385-SH and β-casein shRNA (m) Lentiviral Particles: sc-40385-V.

Molecular Weight of β-casein: 29 kDa.

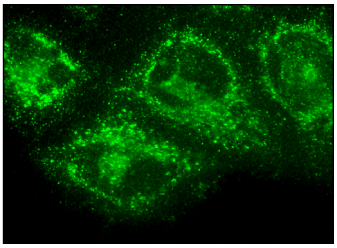
RESEARCH USE

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

DATA



β-casein (M-14): sc-17971. 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.



β-casein (M-14): sc-17971. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Wu, W.J., et al. 2008. TGFβ inhibits prolactin-induced expression of β-casein by a Smad3-dependent mechanism. J. Cell. Biochem. 104: 1647-1659.
2. Berlato, C., et al. 2009. Selective response to Insulin versus Insulin-like growth factor-I and -II and upregulation of Insulin receptor splice variant B in the differentiated mouse mammary epithelium. Endocrinology 150: 2924-2933.
3. Lew, B.J., et al. 2009. Activation of the aryl hydrocarbon receptor during different critical windows in pregnancy alters mammary epithelial cell proliferation and differentiation. Toxicol. Sci. 111: 151-162.
4. Yi, N. and Li, N. 2010. Transient expression of chicken antimicrobial peptides by mouse mammary carcinoma cells C127. Protein Pept. Lett. 17: 1517-1523.
5. Beleut, M., et al. 2010. Two distinct mechanisms underlie progesterone-induced proliferation in the mammary gland. Proc. Natl. Acad. Sci. USA 107: 2989-2994.
6. Perotti, C., et al. 2012. The bone morphogenetic protein receptor-1A pathway is required for lactogenic differentiation of mammary epithelial cells *in vitro. In Vitro* Cell. Dev. Biol. Anim. 48: 377-384.
7. Diaz-Guerra, E., et al. 2012. Intrinsic cues and hormones control mouse mammary epithelial tree size. FASEB J. 26: 3844-3853.