SANTA CRUZ BIOTECHNOLOGY, INC.

β-casein (FL-231): sc-30042

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.

REFERENCES

1. Greenberg, R., et al. 1984. Human β-casein. Amino acid sequence and identification of phosphorylation sites. J. Biol. Chem. 259: 5132-5138.
2. Lonnerdal, B., et al. 1990. Cloning and sequencing of a cDNA encoding human milk β-casein. FEBS Lett. 269: 153-156.
3. Menon, R.S., et al. 1992. Regional localization of human β-casein gene (CSN2) to 4pter-q21. Genomics 13: 25-26.
4. Hansson, L., et al. 1994. Structure of the human β-casein encoding gene. Gene 139: 193-199.
5. Winklehner-Jennewein, P., et al. 1998. A distal enhancer region in the human β-casein gene mediates the response to prolactin and glucocorticoid hormones. Gene 217: 127-139.

CHROMOSOMAL LOCATION

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

SOURCE

β-casein (FL-231) is a rabbit polyclonal antibody raised against amino acids 1-231 representing full length 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.

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

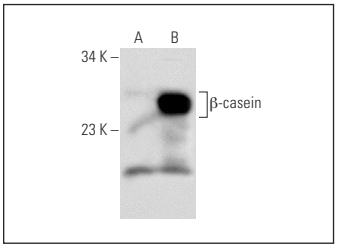
β-casein (FL-231) is recommended for detection of β-casein of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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.

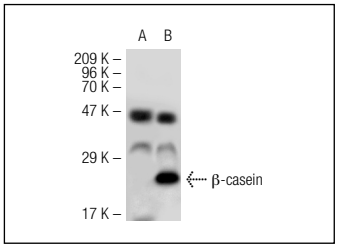
Molecular Weight of β-casein: 29 kDa.

Positive Controls: β-casein (m5): 293T Lysate: sc-119013.

DATA



β-casein (FL-231): sc-30042. Western blot analysis of β-casein expression in non-transfected: sc-117752 (**A**) and mouse β-casein transfected: sc-119013 (**B**) 293T whole cell lysates.



β-casein (FL-231): sc-30042. Western blot analysis of β-casein expression in non-transfected: sc-117752 (**A**) and mouse β-casein transfected: sc-119010 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cocola, C., et al. 2008. A rat mammary gland cancer cell with stem cell properties of self-renewal and multi-lineage differentiation. Cytotechnology 58: 25-32.
2. Wu, W.J., et al. 2008. TGFβ inhibits prolactin-induced expression of β-casein by a Smaddent mechanism. J. Cell. Biochem. 104: 1647-1659.
3. Raafat, A., et al. 2009. Rbpj conditional knockout reveals distinct functions of Notch 4/Int-3 in mammary 3-depengland development and tumorigenesis. Oncogene 28: 219-230.
4. van Miltenburg, M.H., et al. 2009. Complete focal adhesion kinase deficiency in the mammary gland causes ductal dilation and aberrant branching morphogenesis through defects in Rho kinase-dependent cell contractility. FASEB J. 23: 3482-3489.

RESEARCH USE

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