

β -casein (H-7): sc-166520

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/EBP β (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. NF κ B 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 (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 90-115 within an internal region of β -casein of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG $_3$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166520 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

β -casein (H-7) is recommended for detection of β -casein of mouse origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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.

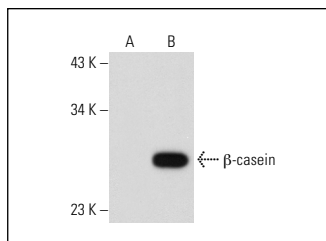
STORAGE

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.

DATA



β -casein (H-7): sc-166520. 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

- Dong, J., et al. 2011. ID4 regulates mammary gland development by suppressing p38MAPK activity. *Development* 138: 5247-5256.
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- Zhao, H., et al. 2012. A humanized pattern of aromatase expression is associated with mammary hyperplasia in mice. *Endocrinology* 153: 2701-2713.
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- Apostoli, A.J., et al. 2014. Loss of PPAR γ expression in mammary secretory epithelial cells creates a pro-breast tumorigenic environment. *Int. J. Cancer* 134: 1055-1066.
- Yang, Y., et al. 2016. Transgenesis of Tol2-mediated seamlessly constructed BAC mammary gland expression vectors in *Mus musculus*. *J. Biotechnol.* 218: 66-72.
- Dianati, E., et al. 2017. From the cover: exposure to an environmentally relevant mixture of brominated flame retardants decreased p- β -catenin^{ser675} expression and its interaction with E-cadherin in the mammary glands of lactating rats. *Toxicol. Sci.* 159: 114-123.
- Carr, D., et al. 2018. cIAP2 is an independent signaling and survival factor during mammary lactational involution and tumorigenesis. *J. Mammary Gland Biol. Neoplasia* 23: 109-123.
- Chen, J., et al. 2023. Niacin/ β -hydroxybutyrate regulates milk fat and milk protein synthesis via the GPR109A/Gi/mTORC1 pathway. *Food Funct.* 14: 2642-2656.

PROTOCOLS

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