

α -S1-casein (D-12): sc-365929

BACKGROUND

α -S1-casein, also known as CSN1S1, CSN1 or CASA, is a 185 amino acid secreted protein that is mammary gland-specific and belongs to the α -casein family. Existing as a disulfide-linked heterodimer with κ -casein, α -S1-casein plays an important role in the ability of milk to transport calcium phosphate, a family of minerals that are key components of bone and teeth. α -S1-casein exists as multiple alternatively spliced isoforms and is encoded by a gene which maps to a region on human chromosome 4 that encodes other casein family members. Chromosome 4 houses nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Cavaletto, M., et al. 1994. Human α -S1-casein like protein: purification and N-terminal sequence determination. *Biol. Chem. Hoppe-Seyler* 375: 149-151.
2. Johnsen, L.B., et al. 1995. Characterization of three types of human α -S1-casein mRNA transcripts. *Biochem. J.* 309: 237-242.
3. Chen, C.S., et al. 1995. A mapping study of 13 genes on human chromosome bands 4q11→q25. *Cytogenet. Cell Genet.* 69: 260-265.
4. Fujiwara, Y., et al. 1997. Genomic organization and chromosomal localization of the human casein gene family. *Hum. Genet.* 99: 368-373.
5. Rijnkels, M., et al. 1997. Physical map and localization of the human casein gene locus. *Mamm. Genome* 8: 285-286.

CHROMOSOMAL LOCATION

Genetic locus: CSN1S1 (human) mapping to 4q13.3; Csn1s1 (mouse) mapping to 5 E1.

SOURCE

α -S1-casein (D-12) is a mouse monoclonal antibody raised against amino acids 14-313 mapping at the C-terminus of α -S1-casein of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

α -S1-casein (D-12) is available conjugated to agarose (sc-365929 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365929 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365929 PE), fluorescein (sc-365929 FITC), Alexa Fluor® 488 (sc-365929 AF488), Alexa Fluor® 546 (sc-365929 AF546), Alexa Fluor® 594 (sc-365929 AF594) or Alexa Fluor® 647 (sc-365929 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365929 AF680) or Alexa Fluor® 790 (sc-365929 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

α -S1-casein (D-12) is recommended for detection of α -S1-casein of mouse, rat and human 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 α -S1-casein siRNA (h): sc-72410, α -S1-casein siRNA (m): sc-72411, α -S1-casein shRNA Plasmid (h): sc-72410-SH, α -S1-casein shRNA Plasmid (m): sc-72411-SH, α -S1-casein shRNA (h) Lentiviral Particles: sc-72410-V and α -S1-casein shRNA (m) Lentiviral Particles: sc-72411-V.

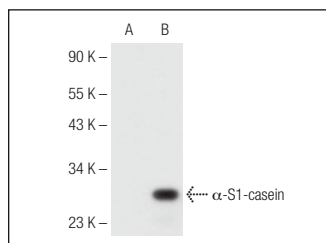
Molecular Weight of α -S1-casein: 22 kDa.

Positive Controls: α -S1-casein (m): 293T Lysate: sc-118118.

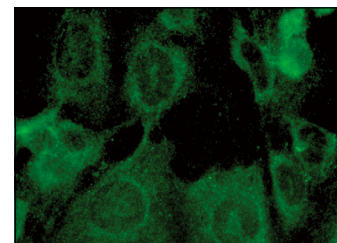
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 -S1-casein (D-12): sc-365929. Western blot analysis of α -S1-casein expression in non-transfected: sc-117752 (A) and mouse α -S1-casein transfected: sc-118118 (B) 293T whole cell lysates.



α -S1-casein (D-12): sc-365929. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Spitzer, A.J., et al. 2020. Bacterial endotoxin induces oxidative stress and reduces milk protein expression and hypoxia in the mouse mammary gland. *Oxid. Med. Cell. Longev.* 2020: 3894309.

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.