

DSP (H-300): sc-33586

BACKGROUND

DSPP (dentin sialophosphoprotein) is a precursor protein that is cleaved into two mature forms, DSP (dentin sialoprotein) and DPP (dentin phosphoprotein). DSPP is a member of the small integrin-binding ligand N-linked glycoprotein (SIBLING) family of proteins and is secreted by odontoblasts. DSP is heavily glycosylated but DPP is not. DSP and DPP are principle proteins of the dentin extracellular matrix of the tooth, with DSP having a role in dentinogenesis and DPP binding calcium, facilitating initial mineralization of dentin matrix collagen and regulating the size and shape of the crystals. Mutations in the DSPP gene are associated with DFNA39/DGI1 (deafness, autosomal dominant, 39, with dentinogenesis imperfecta 1), a disease characterized by progressive heavy-frequency hearing loss, DGI2 (dentinogenesis imperfecta 2) and DGI3 (dentinogenesis imperfecta 3), diseases characterized by amber-brown teeth that fracture and shed enamel with wear.

REFERENCES

1. Wang, S.K., et al. 2011. Enamel malformations associated with a defined dentin sialophosphoprotein mutation in two families. *Eur. J. Oral Sci.* 119: 158-167.
2. Suzuki, S., et al. 2012. Dentin sialophosphoprotein and dentin matrix protein-1: two highly phosphorylated proteins in mineralized tissues. *Arch. Oral Biol.* 57: 1165-1175.

CHROMOSOMAL LOCATION

Genetic locus: DSPP (human) mapping to 4q22.1.

SOURCE

DSP (H-300) is a rabbit polyclonal antibody raised against amino acids 17-316 mapping near the N-terminus of DSPP of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DSP (H-300) is recommended for detection of DSP and precursor DSPP of human 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 DSPP siRNA (h): sc-40500, DSPP shRNA Plasmid (h): sc-40500-SH and DSPP shRNA (h) Lentiviral Particles: sc-40500-V.

Molecular Weight of human DSPP: 131 kDa.

Molecular Weight of human DSP: 47 kDa.

Molecular Weight of mouse/rat DSPP: 94/70 kDa.

Molecular Weight of mouse/rat DSP: 45 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Guven, E.P., et al. 2011. Effect of dental materials calcium hydroxide-containing cement, mineral trioxide aggregate, and enamel matrix derivative on proliferation and differentiation of human tooth germ stem cells. *J. Endod.* 37: 650-656.
2. Yalvac, M.E., et al. 2011. Differentiation and neuro-protective properties of immortalized human tooth germ stem cells. *Neurochem. Res.* 36: 2227-2235.
3. Ferro, F., et al. 2011. Adipose tissue-derived stem cell *in vitro* differentiation in a three-dimensional dental bud structure. *Am. J. Pathol.* 178: 2299-2310.
4. Tasli, P.N., et al. 2013. Isolation and characterization of dental pulp stem cells from a patient with Papillon-Lefevre syndrome. *J. Endod.* 39: 31-38.
5. Güven, E.P., et al. 2013. *In vitro* comparison of induction capacity and biomineralization ability of mineral trioxide aggregate and a bioceramic root canal sealer. *Int. Endod. J.* 46: 1173-1182.

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.

PROTOCOLS

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



Try **DSPP (LFMb-21): sc-73632**, our highly recommended monoclonal alternative to DSP (H-300). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **DSPP (LFMb-21): sc-73632**.