

DSP (M-20): sc-18328

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 imperfect 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.
3. Li, D., et al. 2012. Mutation identification of the DSPP in a Chinese family with DGI-II and an up-to-date bioinformatic analysis. *Genomics* 99: 220-226.

CHROMOSOMAL LOCATION

Genetic locus: *Dspp* (mouse) mapping to 5 E5.

SOURCE

DSP (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DSP of mouse origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18328 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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.

APPLICATIONS

DSP (M-20) is recommended for detection of DSP and precursor DSPP of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 (m): sc-40501, DSPP shRNA Plasmid (m): sc-40501-SH and DSPP shRNA (m) Lentiviral Particles: sc-40501-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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kikuchi, H., et al. 2004. Odontoblasts induced from mesenchymal cells of murine dental papillae in three-dimensional cell culture. *Cell Tissue Res.* 317: 173-185.
2. Fujiwara, S., et al. 2006. Isolated rat dental pulp cell culture and transplantation with an alginate scaffold. *Okajimas Folia Anat. Jpn.* 83: 15-24.
3. Liu, Y., et al. 2013. Down-regulation of Wnt10a affects odontogenesis and proliferation in mesenchymal cells. *Biochem. Biophys. Res. Commun.* 434: 717-721.
4. Kawai, R., et al. 2014. Mouse ES cells have a potential to differentiate into odontoblast-like cells using hanging drop method. *Oral Dis.* 20: 395-403.
5. Ozeki, N., et al. 2014. Differentiation of human skeletal muscle stem cells into odontoblasts is dependent on induction of $\alpha 1$ integrin expression. *J. Biol. Chem.* 289: 14380-14391.



Try **DSPP (LFMb-21): sc-73632**, our highly recommended monoclonal alternative to DSP (M-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **DSPP (LFMb-21): sc-73632**.