SANTA CRUZ BIOTECHNOLOGY, INC.

DSPP (LFMb-21): sc-73632

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.

CHROMOSOMAL LOCATION

Genetic locus: DSPP (human) mapping to 4q22.1; Dspp (mouse) mapping to 5 E5.

SOURCE

DSPP (LFMb-21) is a mouse monoclonal antibody raised against amino acids 487-502 of DSPP of human origin.

PRODUCT

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

DSPP (LFMb-21) is available conjugated to agarose (sc-73632 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-73632 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-73632 PE), fluorescein (sc-73632 FITC), Alexa Fluor® 488 (sc-73632 AF488), Alexa Fluor® 546 (sc-73632 AF546), Alexa Fluor® 594 (sc-73632 AF594) or Alexa Fluor® 647 (sc-73632 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-73632 AF680) or Alexa Fluor® 790 (sc-73632 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

DSPP (LFMb-21) is recommended for detection of DSPP and DPP of mouse, rat, human and monkey 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with DSP.

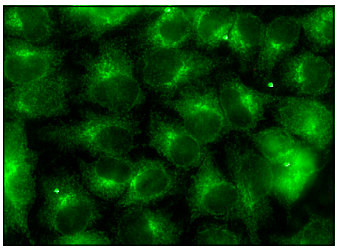
Suitable for use as control antibody for DSPP siRNA (h): sc-40500, DSPP siRNA (m): sc-40501, DSPP shRNA Plasmid (h): sc-40500-SH, DSPP shRNA Plasmid (m): sc-40501-SH, DSPP shRNA (h) Lentiviral Particles: sc-40500-V and DSPP shRNA (m) Lentiviral Particles: sc-40501-V.

Molecular Weight of DSPP: 131 kDa.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



DSPP (LFMb-21): sc-73632. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. El Karim, I.A., et al. 2011. Human odontoblasts express functional thermo-sensitive TRP channels: Implications for dentin sensitivity. Pain 152: 2211-2223.
2. Wan, M., et al. 2012. microRNA miR-34a regulates cytodifferentiation and targets multi-signaling pathways in human dental papilla cells. PLoS ONE 7: e50090.
3. Salmon, B., et al. 2013. MEPE-derived ASARM peptide inhibits odontogenic differentiation of dental pulp stem cells and impairs mineralization in tooth models of X-linked hypophosphatemia. PLoS ONE 8: e56749.
4. Ozeki, N., et al. 2014. Differentiation of human skeletal muscle stem cells into odontoblasts is dependent on induction of α1 Integrin expression. J. Biol. Chem. 289: 14380-14391.
5. Muromachi, K., et al. 2015. CCN2/CTGF expression via cellular uptake of BMP-1 is associated with reparative dentinogenesis. Oral Dis. 21: 778-784.
6. Ogbureke, K.U., et al. 2016. Matrix metalloproteinase 20 co-expression with dentin sialophosphoprotein in human and monkey kidneys. J. Histochem. Cytochem. 64: 623-636.
7. Hamilton, S.L., et al. 2017. Cancer secretome may influence BSP and DSP expression in human salivary gland cells. J. Histochem. Cytochem. 65: 139-151.
8. Liu, Z., et al. 2018. HDAC inhibitor LMK-235 promotes the odontoblast differentiation of dental pulp cells. Mol. Med. Rep. 17: 1445-1452.
9. Zhang, Y., et al. 2019. Guanine and nucleotide binding protein 3 promotes odonto/osteogenic differentiation of apical papilla stem cells via JNK and ERK signaling pathways. Int. J. Mol. Med. 43: 382-392.

RESEARCH USE

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