

desmoplakin I (H-14): sc-18083

BACKGROUND

Desmosomes are major cell adhesion junctions that are particularly prominent in the epidermis and in cardiac tissue, and are important for the rigidity and strength of the cell. The desmosome consists of several proteins, of which desmoplakin is the most abundant. Desmoplakin plays an important role in the attachment of the filaments to the desmosome. Specifically, desmoplakin interacts with plakophilin 1 (PKP1), PKP2 or PKP3, or combinations thereof, to selectively recruit plakophilins to desmosomal plaques. Desmoplakin has also been shown to function as a transglutaminase substrate *in vitro*, suggesting that it may participate in cell adhesion at the intraepidermal level. Desmoplakin exists as a two-stranded coil structure. Alternative splicing gives rise to two isoforms, desmoplakin I and II, which differ by 600 amino acids.

REFERENCES

1. Green, K.J., Parry, D.A., Steinert, P.M., Virata, M.L., Wagner, R.M., Angst, B.D. and Nilles, L.A. 1990. Structure of the human desmoplakins: implications for function in the desmosomal plaque. *J. Biol. Chem.* 265: 2603-2612. Erratum: *J. Biol. Chem.* 265: 11406-11407.
2. Norgett, E.E., Hatsell, S.J., Carvajal-Huerta, L., Cabezas, J.C., Common, J., Purkis, P.E., Whittock, N., Leigh, I.M., Stevens, H.P. and Kelsell, D.P. 2000. Recessive mutation in desmoplakin disrupts desmoplakin-intermediate filament interactions and causes dilated cardiomyopathy, woolly hair and keratoderma. *Hum. Mol. Genet.* 9: 2761-2766.
3. Hofmann, I., Mertens, C., Brette, I.M., Nimmrich, V., Schnolzer, M. and Herrmann, H. 2000. Interaction of plakophilins with desmoplakin and intermediate filament proteins: an *in vitro* analysis. *J. Cell Sci.* 113: 2471-2483.
4. Esposito, C., Lombardi, M.L., Ruocco, V., Cozzolino, A., Mariniello, L. and Porta, R. 2000. Implication of tissue transglutaminase and desmoplakin in cell adhesion mechanism in human epidermis. *Mol. Cell. Biochem.* 206: 57-65.
5. Locuslink Report (Locus ID: 1832). <http://www.ncbi.nlm.nih.gov/locuslink/>

CHROMOSOMAL LOCATION

Genetic locus: DSP (human) mapping to 6p24.3.

SOURCE

desmoplakin I (H-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of desmoplakin 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.

Blocking peptide available for competition studies, sc-18083 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

desmoplakin I (H-14) is recommended for detection of desmoplakin I of human 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).

desmoplakin I (H-14) is also recommended for detection of desmoplakin I in additional species, including equine, canine and porcine.

Suitable for use as control antibody for desmoplakin I/II siRNA (h): sc-43724, desmoplakin I/II shRNA Plasmid (h): sc-43724-SH and desmoplakin I/II shRNA (h) Lentiviral Particles: sc-43724-V.

Molecular Weight of desmoplakin I: 250 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.

STORAGE

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

PROTOCOLS

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