

desmoplakin I/II (A-1): sc-390975

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.

CHROMOSOMAL LOCATION

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

SOURCE

desmoplakin I/II (A-1) is a mouse monoclonal antibody raised against amino acids 79-300 mapping near the N-terminus of desmoplakin I of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

desmoplakin I/II (A-1) is available conjugated to agarose (sc-390975 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390975 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390975 PE), fluorescein (sc-390975 FITC), Alexa Fluor® 488 (sc-390975 AF488), Alexa Fluor® 546 (sc-390975 AF546), Alexa Fluor® 594 (sc-390975 AF594) or Alexa Fluor® 647 (sc-390975 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390975 AF680) or Alexa Fluor® 790 (sc-390975 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

APPLICATIONS

desmoplakin I/II (A-1) is recommended for detection of desmoplakin I/II of human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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 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.

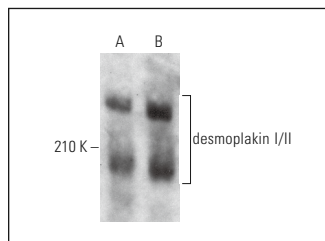
Molecular Weight of desmoplakin I/II: 250/210 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or SCC-4 whole cell lysate: sc-364363.

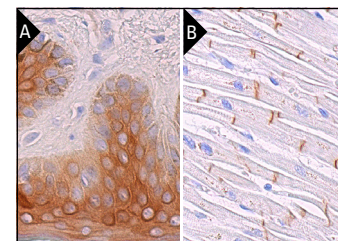
STORAGE

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

DATA



desmoplakin I/II (A-1): sc-390975. Western blot analysis of desmoplakin I/II expression in MCF7 (A) and SCC-4 (B) whole cell lysates.



desmoplakin I/II (A-1): sc-390975. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing intercalated disc staining of myocytes (B).

SELECT PRODUCT CITATIONS

- Hütz, K., et al. 2017. Loss of desmoglein 2 promotes tumorigenic behavior in pancreatic cancer cells. *Mol. Carcinog.* 56: 1884-1895.
- Polivka, L., et al. 2018. Epithelial barrier dysfunction in desmoglein-1 deficiency. *J. Allergy Clin. Immunol.* 142: 702-706.e7.
- Wang, H., et al. 2019. Invasiveness-triggered state transition in malignant melanoma cells. *J. Cell. Physiol.* 234: 5354-5361.
- Bastida-Ruiz, D., et al. 2020. Activated α_2 -macroglobulin binding to cell surface GRP78 induces trophoblastic cell fusion. *Sci. Rep.* 10: 9666.
- Hiermaier, M., et al. 2021. The Actin binding protein α -Adducin modulates desmosomal turnover and plasticity. *J. Invest. Dermatol.* 141: 1219-1229.e11.
- Jung, S., et al. 2021. Contribution of p53 in sensitivity to EGFR tyrosine kinase inhibitors in non-small cell lung cancer. *Sci. Rep.* 11: 19667.
- Shoda, T., et al. 2021. Desmoplakin and periplakin genetically and functionally contribute to eosinophilic esophagitis. *Nat. Commun.* 12: 6795.
- Mun, S., et al. 2022. Transcriptome profile of membrane and extracellular matrix components in ligament-fibroblastic progenitors and cementoblasts differentiated from human periodontal ligament cells. *Genes* 13: 659.
- Hiermaier, M., et al. 2022. Pemphigus foliaceus autoantibodies induce redistribution primarily of extradesmosomal desmoglein 1 in the cell membrane. *Front. Immunol.* 13: 882116.
- Wang, X., et al. 2022. Paraneoplastic pemphigus autoantibodies against C-terminus of desmoplakin induced acantholysis *in vitro* and *in vivo*. *Front. Immunol.* 13: 886226.

RESEARCH USE

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