SANTA CRUZ BIOTECHNOLOGY, INC.

dsg3 (5G11): sc-53487

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pemphigus is an autoimmune disease of skin adhesion associated with auto-antibodies against a number of keratinocyte antigens, such as the adhesion molecules desmoglein (dsg) 1 and 3 and acetylcholine receptors. Desmogleins, type I membrane proteins, are important for cell adhesion and are expressed in great abundance at the desmosomes, which are adhesive cell junctions. Desmogleins belong to the cadherin family and consist of dsg1, dsg2 and dsg3. Calcium binds to the putative calcium binding sites at the extracellular N-terminal domain, which has cadherin-like repeats. Unlike normal human keratinocytes, the squamous cell carcinoma cells exhibit diminished or unusual expression of dsg3 and dsg1, which bear pemphigus vulgaris and pemphigus foliaceus antigens, respectively. Several carcinoma cell lines constantly express dsg2 and dsg3 mRNA, whereas cultured normal human keratinocytes always express dsg1 and dsg3 mRNA, with or without dsg2 mRNA. This expression pattern indicates that desmoglein isoforms exhibit abnormal expression and may be related to tumor cell kinetics, such as cell invasion and metastasis. dsg2 is the fundamental dsg common to all desmosome-possessing tissues and is the largest desmoglein in the family.

REFERENCES

1. Amagai, M., et al. 1991. Autoantibodies against a novel epithelial cadherin in pemphigus vulgaris, a disease of cell adhesion. Cell 67: 869-877.
2. Niles, L.A., et al. 1991. Structural analysis and expression of human desmoglein: a cadherin-like component of the desmosome. J. Cell Sci. 99: 809-821.

CHROMOSOMAL LOCATION

Genetic locus: DSG3 (human) mapping to 18q12.1; Dsg3 (mouse) mapping to 18 A2.

SOURCE

dsg3 (5G11) is a mouse monoclonal antibody raised against A-431 human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

dsg3 (5G11) is available conjugated to agarose (sc-53487 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53487 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53487 PE), fluorescein (sc-53487 FITC), Alexa Fluor® 488 (sc-53487 AF488), Alexa Fluor® 546 (sc-53487 AF546), Alexa Fluor® 594 (sc-53487 AF594) or Alexa Fluor® 647 (sc-53487 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53487 AF680) or Alexa Fluor® 790 (sc-53487 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

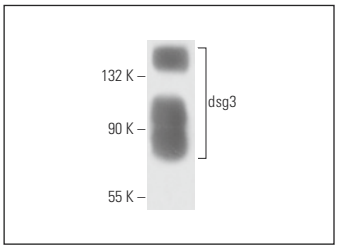
dsg3 (5G11) is recommended for detection of dsg3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with dsg1 or dsg2.

Suitable for use as control antibody for dsg3 siRNA (h): sc-43115, dsg3 siRNA (m): sc-43116, dsg3 shRNA Plasmid (h): sc-43115-SH, dsg3 shRNA Plasmid (m): sc-43116-SH, dsg3 shRNA (h) Lentiviral Particles: sc-43115-V and dsg3 shRNA (m) Lentiviral Particles: sc-43116-V.

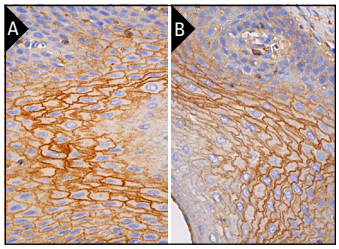
Molecular Weight of intact dsg3: 130 kDa.

Positive Controls: SCC-25 whole cell lysate or SCC-4 whole cell lysate: sc-364363.

DATA



dsg3 (5G11): sc-53487. Western blot analysis of dsg3 expression in SCC-25 whole cell lysate.



dsg3 (5G11): sc-53487. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus (**A**) and human oral mucosa (**B**) tissue showing membrane staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Jiang, L.W., et al. 2016. Using human epithelial amnion cells in human de-epidermized dermis for skin regeneration. J. Dermatol. Sci. 81: 26-34.
2. Phan, Q.T., et al. 2021. The globular C1q receptor is required for epidermal growth factor receptor signaling during *Candida albicans* infection. mBio 12: e0271621.
3. Lin, X., et al. 2022. Low SOCS3 expression in $CD4^+$ T cells from pemphigus vulgaris patients enhanced Th1- and Th17-cell differentiation and exacerbated acantholysis via STAT activation. Mol. Immunol. 150: 114-125.
4. Zaver, S.A., et al. 2023. Targeting SERCA2 in organotypic epidermis reveals MEK inhibition as a therapeutic strategy for Darier disease. JCI Insight 8: e170739.
5. Simpson, C.L., et al. 2024. ERK hyperactivation in epidermal keratinocytes impairs intercellular adhesion and drives Grover disease pathology. JCI Insight 9: e182983.

RESEARCH USE

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