

## dsg3 (5H10): sc-23912



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.

## CHROMOSOMAL LOCATION

Genetic locus: DSG3 (human) mapping to 18q12.1.

## SOURCE

dsg3 (5H10) is a mouse monoclonal antibody within an extracellular domain of human dsg3.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

dsg3 (5H10) is available conjugated to agarose (sc-23912 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23912 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23912 PE), fluorescein (sc-23912 FITC), Alexa Fluor® 488 (sc-23912 AF488), Alexa Fluor® 546 (sc-23912 AF546), Alexa Fluor® 594 (sc-23912 AF594) or Alexa Fluor® 647 (sc-23912 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23912 AF680) or Alexa Fluor® 790 (sc-23912 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

dsg3 (5H10) is recommended for detection of desmoglein 3 of 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with dsg1, dsg2 or mouse proteins.

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

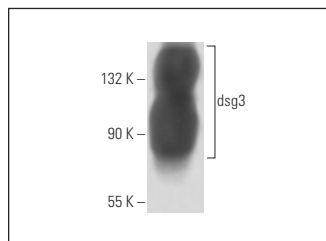
Molecular Weight of intact dsg3: 130 kDa.

Positive Controls: SCC-25 whole cell lysate.

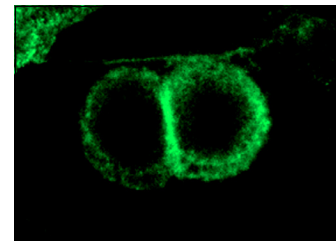
## STORAGE

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

## DATA



dsg3 (5H10): sc-23912. Western blot analysis of dsg3 expression in SCC-25 whole cell lysate.



dsg3 (5H10): sc-23912. Immunofluorescence staining of methanol-fixed SCC-4 cells showing membrane localization.

## SELECT PRODUCT CITATIONS

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3. Cirillo, N., et al. 2009. High-dose pemphigus antibodies against linear epitopes of desmoglein 3 (dsg3) can induce acantholysis and depletion of dsg3 from keratinocytes. *Immunol. Lett.* 122: 208-213.
4. Chen, Y.J., et al. 2013. dsg3 facilitates cancer cell growth and invasion through the dsg3-plakoglobin-TCF/LEF-Myc/cyclin D1/MMP signaling pathway. *PLoS ONE* 8: e64088.
5. Sherrill, J.D., et al. 2014. Desmoglein-1 regulates esophageal epithelial barrier function and immune responses in eosinophilic esophagitis. *Mucosal Immunol.* 7: 718-729.
6. Moftah, H., et al. 2016. Desmoglein 3 regulates membrane trafficking of cadherins, an implication in cell-cell adhesion. *Cell Adh. Migr.* 2: 1-22.
7. Wan, H., et al. 2016. Evidence for dsg3 in regulating Src signaling by competing with it for binding to caveolin-1. *Data Brief* 6: 124-134.
8. Murai, K., et al. 2018. Epidermal tissue adapts to restrain progenitors carrying clonal p53 mutations. *Cell Stem Cell* 23: 687-699.
9. Rehman, A., et al. 2019. The desmosomal cadherin desmoglein-3 acts as a keratinocyte anti-stress protein via suppression of p53. *Cell Death Dis.* 10: 750.
10. Beckert, B., et al. 2019. Immortalized human hTert/KER-CT keratinocytes a model system for research on desmosomal adhesion and pathogenesis of pemphigus vulgaris. *Int. J. Mol. Sci.* 20: 6221.

## RESEARCH USE

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