

## dsg2 (AH12.2): sc-80663



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: DSG2 (human) mapping to 18q12.1.

## SOURCE

dsg2 (AH12.2) is a mouse monoclonal antibody raised against lipid raft-enriched fractions of model intestinal epithelial cells of human origin.

## 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.

dsg2 (AH12.2) is available conjugated to agarose (sc-80663 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-80663 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-80663 PE), fluorescein (sc-80663 FITC), Alexa Fluor® 488 (sc-80663 AF488), Alexa Fluor® 546 (sc-80663 AF546), Alexa Fluor® 594 (sc-80663 AF594) or Alexa Fluor® 647 (sc-80663 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-80663 AF680) or Alexa Fluor® 790 (sc-80663 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

dsg2 (AH12.2) is recommended for detection of an extracellular epitope of dsg2 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)], 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 Desmoglein 1 or 3.

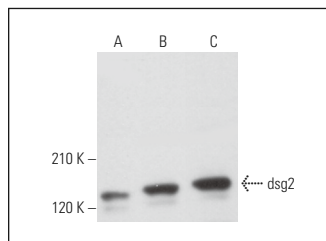
Suitable for use as control antibody for dsg2 siRNA (h): sc-35226, dsg2 shRNA Plasmid (h): sc-35226-SH and dsg2 shRNA (h) Lentiviral Particles: sc-35226-V.

Molecular Weight of dsg2: 59-150 kDa.

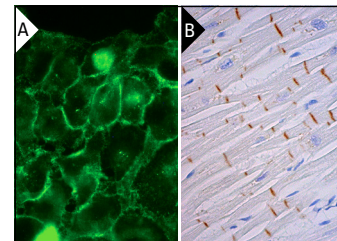
## STORAGE

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

## DATA



dsg2 (AH12.2): sc-80663. Western blot analysis of dsg2 expression in SW480 (A), Caco-2 (B) and A-431 (C) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



dsg2 (AH12.2): sc-80663. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing membrane staining of myocytes (B).

## SELECT PRODUCT CITATIONS

- Wadhawan, V., et al. 2012. From prediction to experimental validation: desmoglein 2 is a functionally relevant substrate of matriptase in epithelial cells and their reciprocal relationship is important for cell adhesion. *Biochem. J.* 447: 61-70.
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- Mao, X., et al. 2017. Stat3 regulates desmoglein 3 transcription in epithelial keratinocytes. *JCI Insight* 2: e92253.
- Samson, A.L., et al. 2020. MLKL trafficking and accumulation at the plasma membrane control the kinetics and threshold for necroptosis. *Nat. Commun.* 11: 3151.
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- 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.

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