SANTA CRUZ BIOTECHNOLOGY, INC.

dsg2 (6D8): sc-53486

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

SOURCE

dsg2 (6D8) 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.

APPLICATIONS

dsg2 (6D8) is recommended for detection 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)] and immunofluorescence (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.

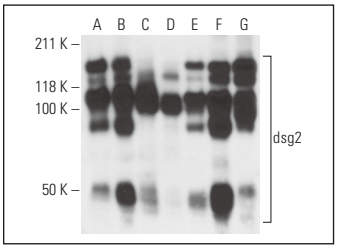
Molecular Weight of dsg2: 59-150 kDa.

Positive Controls: ECV304 cell lysate: sc-2269, T24 cell lysate: sc-2292 or SW480 cell lysate: sc-2219.

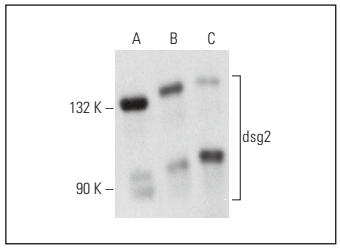
STORAGE

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

DATA



dsg2 (6D8): sc-53486. Western blot analysis of dsg2 expression in ECV304 (**A**), T24 (**B**), SCC-4 (**C**), SW480 (**D**), A549 (**E**), JEG-3 (**F**) and A-431 (**G**) whole cell lysates.



dsg2 (6D8): sc-53486. Western blot analysis of dsg2 expression in HeLa (**A**), Hep G2 (**B**) and T-47D (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Trinh, H.V., et al. 2012. Avidity binding of human adenovirus serotypes 3 and 7 to the membrane cofactor CD46 triggers infection. J. Virol. 86: 1623-1637.
2. Koyama-Nasu, R., et al. 2013. The cancer stem cell marker CD133 interacts with plakoglobin and controls desmoglein-2 protein levels. PLoS ONE 8: e53710.
3. Lam, E., et al. 2015. Effective apical infection of differentiated human bronchial epithelial cells and induction of proinflammatory chemokines by the highly pneumotropic human adenovirus type 14p1. PLoS ONE 10: e0131201.
4. Chelko, S.P., et al. 2016. Central role for GSK3β in the pathogenesis of arrhythmogenic cardiomyopathy. JCI Insight 1: e85923.
5. Baddam, S.R., et al. 2018. The desmosomal cadherin desmoglein-2 experiences mechanical tension as demonstrated by a FRET-based tension biosensor expressed in living cells. Cells 7: 66.
6. Feng, Y., et al. 2020. Human desmoglein-2 and human CD46 mediate HAdV55 infection but human desmoglein-2 plays the major roles. J. Virol. 94: e00747-20.
7. Bieri, M., et al. 2021. The RGD-binding integrins αvβ6 and αvβ8 are receptors for mouse adenovirus-1 and -3 infection. PLoS Pathog. 17: e1010083.

RESEARCH USE

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