10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-Desmoglein-2 (DSG2) Antibody

Mouse Monoclonal Antibody
Catalog # AH13172

Product Information

Application	WB, IF, FC
Primary Accession	Q14126
Other Accession	412597
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG1, kappa
Clone Names	6D8
Calculated MW	122294

Additional Information

Gene ID	1829
Other Names	ARVC10; ARVD10; Cadherin family member 5; CDHF5; CMD1BB; Desmoglein-2; DSG2; HDGC; Human Desmoglein Colon
Application Note	Flow Cytometry (0.5-1ug/million cells); ,Immunofluorescence (1-2ug/ml); ,Western Blotting (0.5-1.0ug/ml) ,Optimal dilution for a specific application should be determined.
Format	200ug/ml of Ab purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available WITHOUT BSA & azide at 1.0mg/ml.
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Anti-Desmoglein-2 (DSG2) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DSG2
Synonyms	CDHF5
Function	A component of desmosome cell-cell junctions which are required for positive regulation of cellular adhesion (PubMed:17559062, PubMed:38395410). Involved in the interaction of plaque proteins and intermediate filaments mediating cell-cell adhesion. Required for proliferation and viability of embryonic stem cells in the blastocyst, thereby crucial for

progression of post-implantation embryonic development (By similarity). Maintains pluripotency by regulating epithelial to mesenchymal transition/mesenchymal to epithelial transition (EMT/MET) via interacting with and sequestering CTNNB1 to sites of cell-cell contact, thereby reducing translocation of CTNNB1 to the nucleus and subsequent transcription of CTNNB1/TCF-target genes (PubMed:29910125). Promotes pluripotency and the multi-lineage differentiation potential of hematopoietic stem cells (PubMed:27338829). Plays a role in endothelial cell sprouting and elongation via mediating the junctional-association of cortical actin fibers and CDH5 (PubMed:27338829). Promotes cardiomyocyte cell homeostasis and desmosome junction formation at intercalated disks, as a result plays a role in the maintenance of cardiac conduction and heart chamber integrity (By similarity). Positively regulates pancreatic islet development and maintenance of endothelial cell barrier integrity in the pancreas, therefore involved in the controlled release of insulin from islet cells into the circulation in response to glucose (By similarity). Plays a role in limiting inflammatory infiltration and the apoptotic response to injury in kidney tubular epithelial cells, potentially via its role in maintaining cell-cell adhesion and the epithelial barrier (PubMed:38395410). Acts as a positive modulator of CSK and EGFR activation via sequestering them away from lipid rafts, this is independent of its role in desmosome cell junctions (PubMed:26918609). Also disrupts the localization of CAV1 to lipid rafts resulting in its distribution throughout the cytoplasm (PubMed:26918609).

Cellular Location

Cell membrane; Single-pass type I membrane protein. Cell junction, desmosome. Cytoplasm. Note=Localized to intercalated disks in the heart (PubMed:31845994). Localizes to the cytoplasm following cleavage by CASP3 in response to apoptosis (PubMed:17559062) Glycosylation promotes localization to the plasma membrane (PubMed:30885746).

Tissue Location

Expressed in undifferentiated pluripotent stem cells, expression decreases during differentiation (at protein level) (PubMed:29910125). Expressed in hematopoietic stem cells and circulating endothelial progenitor cells, expression decreases upon increasing cell lineage commitment (at protein level) (PubMed:27338829). Expressed on common myeloid progenitors, pro-myelocytes, pro-erythrocytes and B-cell linage progenitors (at protein level). Expression in mature cell types in the bone marrow and mature leukocyte populations is absent (PubMed:27338829). Expressed by foreskin fibroblasts, expression peaks during the early stage of differentiation reprogramming (at protein level) (PubMed:29910125) Expressed by endothelial cells in both arterioles and venules in the cervix (at protein level) (PubMed:27338829). Expressed in pancreatic alpha-cells, beta-cells and exocrine tissue (at protein level) (PubMed:36309486). Expressed in cardiomyocytes (at protein level) (PubMed:31845994, PubMed:38375917). Expressed in kidney tubular epithelial cells (PubMed:38395410). Expressed in the esophageal mucosa (PubMed:24220297).

Background

Recognizes a protein of 165kDa, identified as Desmoglein-2 (DSG2). This monoclonal antibody recognizes the extracellular domain of human desmoglein-2. Desmoglein-2 is a member of the desmosomal cadherin family. Desmosomes are intercellular adhering junctions that represent cell surface attachment sites for intermediate filament. Desmocollins and desmogleins are the main desmosomal transmembrane proteins. Desmogleins consist of Dsg1, Dsg2, Dsg3, and Dsg4 isoforms. Within the desmosome, the extracellular domain of desmoglein is essential for calcium dependent heterophilic binding to the desmocollins, whereas the intracellular domain is essential for binding to the desmosomal plaque protein, plakoglobin. Human Desmoglein-2 is a type I transmembrane glycoprotein of 1117 amino acid (aa) residues with a 23 aa signal peptide and a 25 aa propeptide. It differs from other classic cadherins by having four instead of five cadherin repeat domains in its extracellular region, and a much larger cytoplasmic region containing five

desmoglein repeat domains which share homology with the cadherin repeats. Instead of having the HAV adhesion motif found in type I cadherins, desmogleins have R/YAL as the adhesion motif on its amino-terminal cadherin repeat. The cytoplasmic tails of desmogleins interact with desmoplakins, plakoglobin and plakophilins. In turn, these proteins link the desmogleins with the intermediate filaments. Desmoglein-2 has been shown to be important in establishing cell-cell adhesion and function in epithelial cells. Desmoglein2 was originally identified in colon carcinoma and colon, and was named HDGC (human desmoglein colon).

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