

**DESCRIPTION**

|               |  |        |   |
|---------------|--|--------|---|
| <b>Source</b> | Mouse myeloma cell line, NS0-derived                         |        |   |
|               | Human Desmoglein-2<br>(Ala49-Gly608)<br>Accession # CAA81226 | IEGRMD | Human IgG <sub>1</sub><br>(Pro100-Lys330) |
|               | N-terminus   |        | C-terminus                                |

**N-terminal Sequence** Ala49

**Analysis**

**Structure / Form** Disulfide-linked homodimer

**Predicted Molecular Mass** 89 kDa (monomer)

**SPECIFICATIONS**

**SDS-PAGE** 115 kDa, reducing conditions

**Activity** Measured by the ability of the immobilized protein to support the adhesion of BUD-8 human fibroblast cells. When  $3 \times 10^4$  cells are added to recombinant human Desmoglein-2 coated plates (10 µg/mL, 100 µL/well), approximately 50%-80% will adhere after 1 hour at 37°C. Optimal dilutions should be determined by each laboratory for each application.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 100 µg/mL in sterile PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**BACKGROUND**

Desmoglein-2 (DSG2) is a 160 kDa transmembrane glycoprotein in the cadherin family of calcium dependent adhesion molecules. It is a major protein component of desmosomal contacts between epithelial cells (1, 2). Mature human Desmoglein-2 consists of a 560 amino acid (aa) extracellular domain (ECD) with four cadherin domains, a 25 aa transmembrane segment, and a 484 aa cytoplasmic domain with six desmoglein repeats (3). Within the ECD, human Desmoglein-2 shares 81% aa sequence identity with mouse and rat Desmoglein-2. A 60 kDa ECD fragment can be proteolytically shed, and this is enhanced by EGF R activation (4-6). The cytoplasmic domain is cleaved during apoptosis, leaving the transmembrane segment and ECD as a cell-associated fragment (7). Desmoglein-2 is widely expressed in epithelia and is required for maintenance of the epithelial barrier (1, 2, 8). It can be either up- or down-regulated in a variety of carcinomas during tumor progression (9). Desmoglein-2 also functions as a cell adhesion receptor for several adenovirus serotypes (10). This binding disrupts intercellular junctions between epithelial cells and promotes epithelial-mesenchymal transition (EMT) (10). Mutations in Desmoglein-2 cause cardiac dysfunction typical of arrhythmogenic right ventricular cardiomyopathy (ARVC) (11).

**References:**

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