

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Met1-Ala731 with a C-terminal 6-His tag
Accession # P39038

N-terminal Sequence Analysis His21 & Asp167

Predicted Molecular Mass 78.5 & 62.5 kDa

SPECIFICATIONS

SDS-PAGE 99 & 84 kDa, reducing conditions

Activity Measured by the ability of the immobilized protein to support the adhesion of A172 human glioblastoma cells (ATCC: CRL-1620). When 5×10^4 cells/well are added to Recombinant Mouse Cadherin-4/R-Cadherin coated plates, cell adhesion is enhanced in a dose dependent manner after 90 minutes at 37 °C. The ED₅₀ for this effect is 0.4-2.0 µg/mL.

Endotoxin Level <0.01 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 400 µg/mL in 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

Cadherin-4, also known as R-Cadherin, is a 120-140 kDa type I transmembrane protein belonging to the Cadherin superfamily of calcium-dependent adhesion molecules. Cadherins are involved in multiple processes including embryonic development, cell migration, and maintenance of epithelial integrity (1, 2). Mouse Cadherin-4 is synthesized with a 20 amino acid (aa) signal peptide and a 146 aa N-terminal propeptide. The mature cell surface-expressed protein consists of a 565 amino acid (aa) extracellular domain (ECD) that contains five Cadherin repeats, a 22 aa transmembrane segment, and a 160 aa cytoplasmic domain (3, 4). Within the propeptide and ECD, mouse Cadherin-4 shares 92% and 98% aa sequence identity with human and rat Cadherin-4, respectively. Cadherin-4 is expressed in epithelial cells, vascular smooth muscle cells, glial and neuronal cells, pancreatic β-cells, thyroid follicular cells, and bone marrow Lin⁻ hematopoietic stem cells (4 - 10). It interacts *in cis* to form homodimers as well as heterodimers with N-Cadherin which function as adhesion multimers in trans-configuration (3, 11, 12). It is down-regulated in invasive breast cancer but up-regulated in rhabdomyosarcoma and has been shown to exert both positive and negative effects on cell migration and tumor cell invasiveness (5, 13, 14). Cadherin-4 is involved in a variety of homing processes including guidance of the optic nerve and pioneer axons in early brain development, branching and guidance of the retinal vasculature, and targeting of hematopoietic stem cells to sites of ischemia (7, 10, 15, 16). Cadherin-4 additionally binds to KLRG1, an inhibitory receptor expressed on NK cells (17).

References:

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