SANTA CRUZ BIOTECHNOLOGY, INC.

Laminin β-1 (D-9): sc-17763

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Laminins are essential and abundant structural non-collagenous glycoproteins localizing to basement membranes. Basement membranes (cell-associated extracellular matrices (ECMs)) are polymers of laminins with stabilizing type IV collagen networks, Nidogen and several proteoglycans. Basement membranes are found under epithelial layers, around the endothelium of blood vessels, and surrounding muscle, peripheral nerve and fat cells. Formation of basement membranes influences cell proliferation, phenotype, migration, gene expression and tissue architecture. Each laminin is a heterotrimer of α, β and γ chain subunits that undergoes cell-secretion and incorporation into the ECM. Laminins can self-assemble, bind to other matrix macromolecules and have unique and shared cell interactions mediated by integrins, dystroglycan and cognate laminin receptors. The human Laminin β-1 gene maps to chromosome 7q31.1 and is ubiquitously expressed in tissues that produce basement membranes.

REFERENCES

1. Tryggvason, K. 1993. The laminin family. Curr. Opin. Cell Biol. 5: 877-882.
2. Schnaper, H.W., et al. 1993. Role of laminin in endothelial cell recognition and differentiation. Kidney Int. 43: 20-25.
3. Engvall, E. and Wewer, U.M. 1996. Domains of laminin. J. Cell. Biochem. 61: 493-501.

CHROMOSOMAL LOCATION

Genetic locus: LAMB1 (human) mapping to 7q31.1.

SOURCE

Laminin β-1 (D-9) is a mouse monoclonal antibody raised against amino acids 1487-1786 of Laminin β-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Laminin β-1 (D-9) is recommended for detection of Laminin β-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2000), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Laminin β-1 siRNA (h): sc-29387, Laminin β-1 shRNA Plasmid (h): sc-29387-SH and Laminin β-1 shRNA (h) Lentiviral Particles: sc-29387-V.

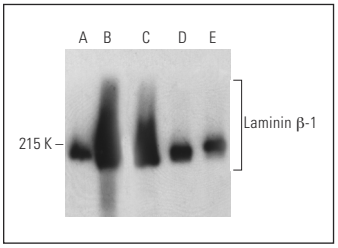
Molecular Weight of Laminin β-1: 220 kDa.

Positive Controls: U-251-MG whole cell lysate: sc-364176, JAR cell lysate: sc-2276 or A-431 whole cell lysate: sc-2201.

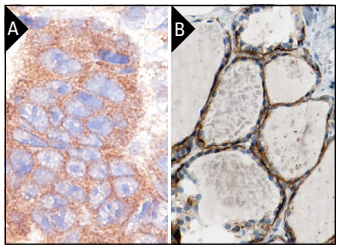
STORAGE

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

DATA



Laminin β-1 (D-9): sc-17763. Western blot analysis of Laminin β-1 expression in A-431 (**A**), JAR (**B**) and U-251-MG (**C**) whole cell lysates and human placenta (**D**) and human testis (**E**) tissue extracts. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.



Laminin β-1 (D-9): sc-17763. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tumor showing cytoplasmic and extracellular staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing extracellular staining around glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Frangié, C., et al. 2006. Extracellular calpains increase tubular epithelial cell mobility. Implications for kidney repair after ischemia. J. Biol. Chem. 281: 26624-26632.
2. Messmer, E.M., et al. 2012. Differences in basement membrane zone components of normal conjunctiva, conjunctiva in glaucoma and normal skin. Acta Ophthalmol. 90: e476-e481.
3. Govaere, O., et al. 2017. The PDGFRα-Laminin B1-keratin 19 cascade drives tumor progression at the invasive front of human hepatocellular carcinoma. Oncogene 36: 6605-6616.
4. Smuczek, B., et al. 2017. The laminin-derived peptide C16 regulates GPNMB expression and function in breast cancer. Exp. Cell Res. 358: 323-334.
5. Yan, Y., et al. 2018. Laminins in an *in vitro* anterior lens capsule model established using HLE B-3 cells. Mol. Med. Rep. 17: 5726-5733.
6. Wei, X., et al. 2018. Kojic acid inhibits senescence of human corneal endothelial cells via NFκB and p21 signaling pathways. Exp. Eye Res. 180: 174-183.
7. Yan, Y., et al. 2019. Laminin α4 overexpression in the anterior lens capsule may contribute to the senescence of human lens epithelial cells in age-related cataract. Aging 11: 2699-2723.
8. Kulkarni, A., et al. 2021. Oncolytic H-1 parvovirus binds to sialic acid on laminins for cell attachment and entry. Nat. Commun. 12: 3834.

RESEARCH USE

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