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FRONTIERS IN LIFE SCIENCE

9-7 Hongo 2-Chome, Bunkyo-Ku
Tokyo 113-0033, Japan

Anti-Laminin-511, Human, Mouse-Mono (Clone 12D)

Catalog NO. FDV-0026

Research use only, not for human or animal therapeutic or diagnostic use.

Product Background

Laminins, which consist of three subunits called α, β and γ chains, are major cell-adhesive components of extracellular matrix, especially basement membranes (BMs). The laminin family is constituted of over 15 isoforms, and each member is expressed in a tissue-specific manner and plays a differential role in each tissue. Laminin-511 (Lm511) (formerly laminin-10), which consists of α5, β1 and γ1 chains, appears at an early stage of development and is most widely expressed in adult tissues, mainly basement membranes of various epithelial tissues and vasculatures. Recently, laminin-511 is often used as a culture substrate for ES and iPS cells.

A mouse monoclonal antibody (clone 12D) for laminin-511, was established using human placental laminin as an antigen. Clone 12D specifically interacts with the trimeric structure of laminin-511 isoform but does not react with any of the α5, β1 and γ1 chains in the reducing conditions. Furthermore, it has been validated that clone 12D does not react with any of laminins-111, -211, -332, -3B32, -411 and -521. Unlike conventional anti-α5 antibodies, clone 12D distinguishes laminin-511 from laminin-521. This is an important tool to evaluate specific distribution and physiological functions of laminin-511. In human cancers, clone 12D detects small vascular vessels with high sensitivity and hence useful for evaluating tumor angiogenesis.

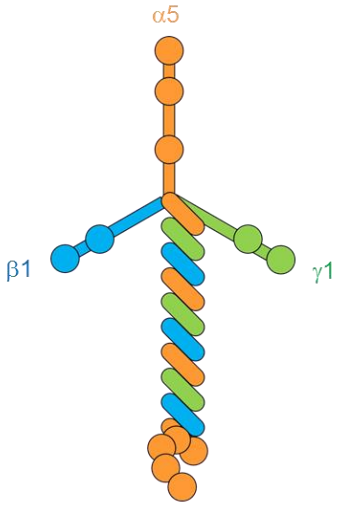


Figure 1. Protein structure of laminin-511

Description

Catalog Number : FDV-0026
Format : Mouse ascites
Volume : 100 µL
Formulation : Ascites without any additives
Host Species and Clonality : Mouse monoclonal
Isotype and Subclass : IgG2b
Lot Number : see vial label
Specificity : Human, other species not tested yet
Storage : For short-term storage, -20°C. For long-term storage, -80°C storage is preferable.
Avoid repeated freeze-thaw cycles and avoid storage at 4°C.

Application

- Western blotting under non-reducing conditions
- Immunohistochemistry under frozen section
- Immunoprecipitaion and immunoaffinity purification
- ELISA

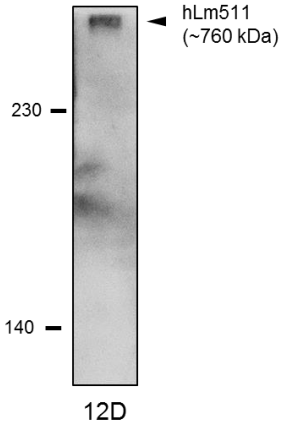
Recommended usage

- Western blotting	1/1,000
- Immunohistochemistry	Optimal dilutions should be determined by the researcher.
- Immunoprecipitation	Optimal conditions should be determined by the researcher.
- ELISA	Optimal conditions should be determined by the researcher.

Application examples

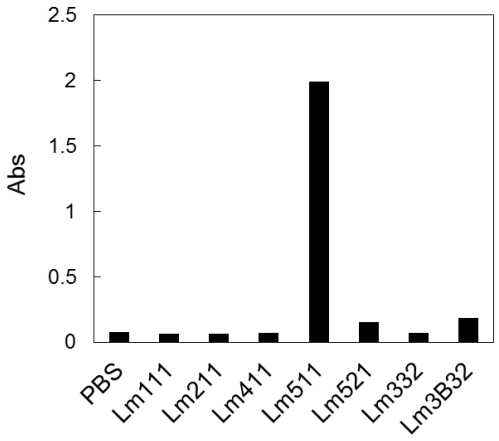
Western blot

Sample : Recombinant human intact laminin-511 (Lm511)
consisting of α5, β1 and γ1 chains
Gel conc. : 4.5% under non-reducing conditions
1st Antibody : clone 12D, 1/1,000 dilution
2nd Antibody : anti-mouse IgG (H+L)-HRP conjugate



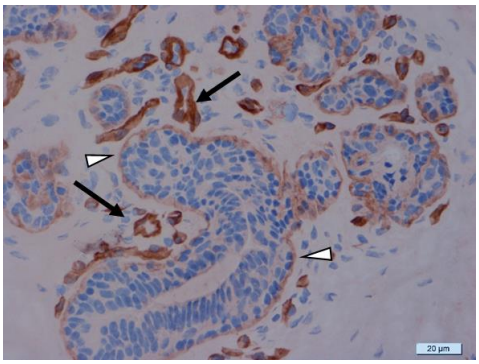
Specificity of 12D for laminin isoforms

Seven recombinant human laminins were coated on a multi-well plate and detected by clone 12D. High specificity of clone 12D to Lm511 is observed.



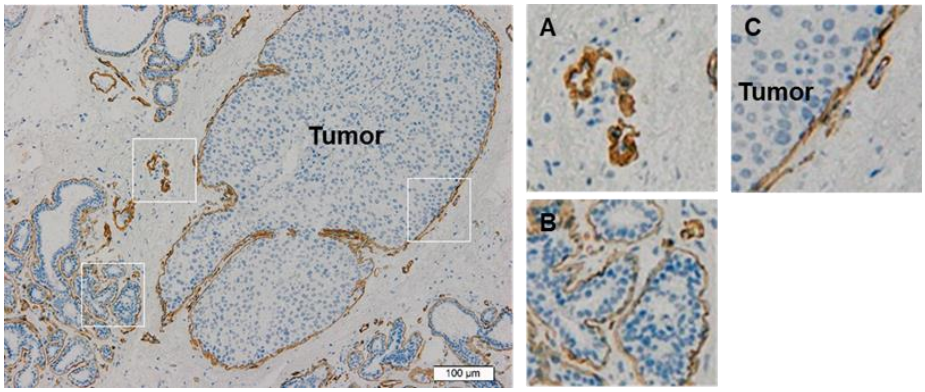
Immunohistochemistry : Human normal mammary gland

Sample : Human mammary gland (frozen slice)
Black arrows : Vascular basement membrane
White arrowheads : Mammary gland basement membrane



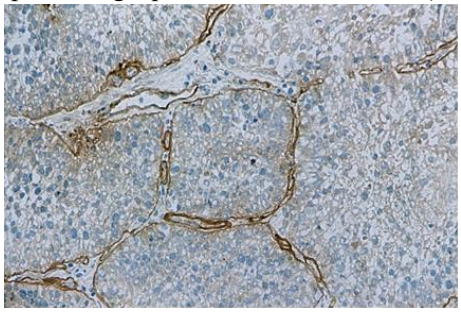
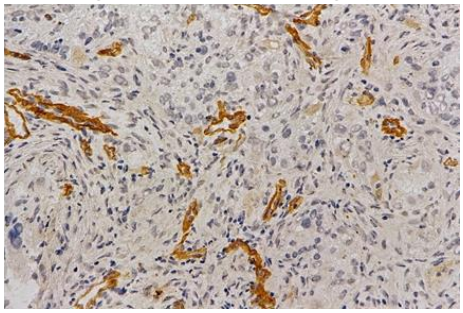
Immunohistochemistry : Breast cancer tissue

Sample : Non-invasive carcinoma tissue (frozen slice)
A: Vascular basement membrane
B: Mammary gland basement membrane
C: Basement membrane-like structures surrounding tumor cells



Immunohistochemistry : Lung cancers

Sample : Lung squamous cell carcinoma (left) and lung adenocarcinoma (right)

*All data are provided from Dr. Kaoru Miyazaki

Reference

1. Komiya *et al., Cancer Med.*, **3**, 537-549 (2014) Angiomodulin (AGM/IGFBP-rP1), a marker of cancer vasculature, is upregulated by vascular endothelial cell growth factor and increases vascular permeability as a ligand of integrin αvβ3.

Related products

Catalog No.	Product name	Target	Application
FDV-0023	Anti-Laminin α3B, Human, Mouse-Mono (F7)	Laminin α3B	IHC, WB, IP, ELISA
FDV-0024	Anti-Laminin α3A, Human, Mouse-Mono (BG5)	Laminin α3A	IHC, WB, IP, ELISA
FDV-0025	Anti-Laminin γ2 N-terminal fragment, Human, Mouse-Mono (P2H)	Laminin γ2 N-terminal fragment	IHC, WB, ELISA
FDV-0026	Anti-Laminin 511, Human, Mouse-Mono (12D)	Trimeric Lm511 structure	IHC, WB, IP, ELISA

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FRONTIERS IN LIFE SCIENCE
URL: http://funakoshi.co.jp
9-7 Hongo 2-Chome, Bunkyo-ku, Tokyo 113-0033