

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

Catalog NO. FDV-0026

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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 $\alpha 5$, $\beta 1$ and $\gamma 1$ 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.

Dr. Miyazaki and co-workers developed a mouse monoclonal antibody (clone 12D) for laminin-511, 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 $\alpha 5$, $\beta 1$ and $\gamma 1$ 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- $\alpha 5$ 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.

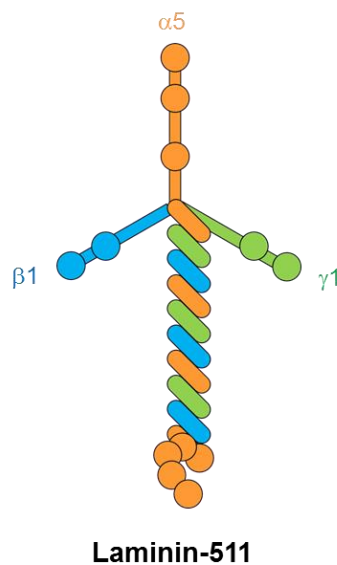


Figure 1. Protein structure of laminin-511

Description

Catalog Number : FDV-0026

Format : Mouse ascites

Volume : 100 μ L

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
 - Immunoprecipitation and immunoaffinity purification
 - ELISA
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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.
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Application examples

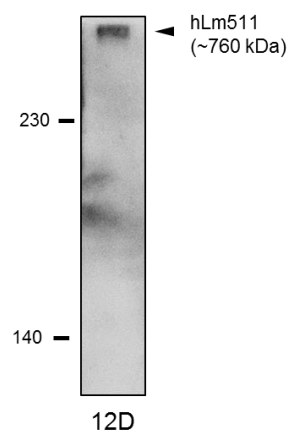
Western blot

Sample : Recombinant human intact laminin-511 (Lm511)
consisting of α 5, β 1 and γ 1 chains

Gel conc. : 4.5% under non-reducing conditions

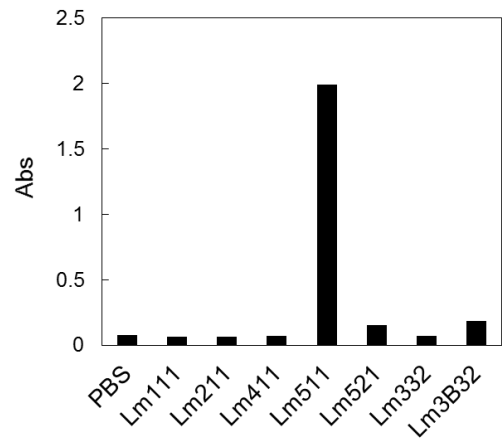
1st Antibody : clone 12D, 1/1,000 dilution

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.

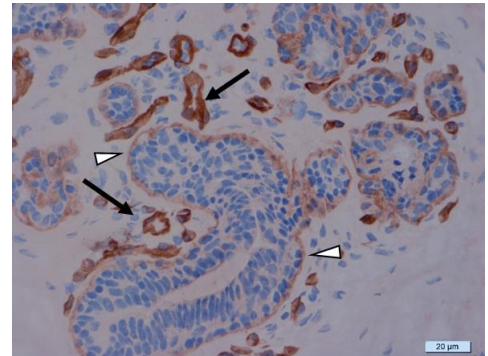


Immunohistochemistry : Human normal mammary gland

Sample : Human mammary gland (frozen slice)

Black arrows : Vascular basement membrane

White arrowheads : Mammary gland basement membrane



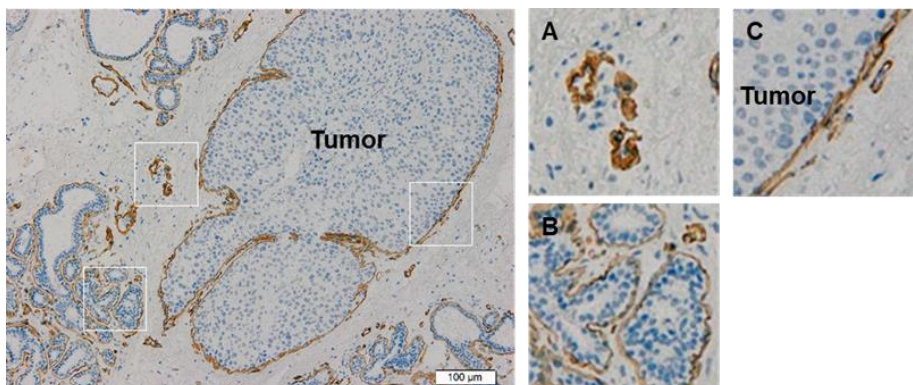
Immunohistochemistry : Breast cancer tissue

Sample : Non-invasive carcinoma tissue (frozen slice)

A: Vascular basement membrane

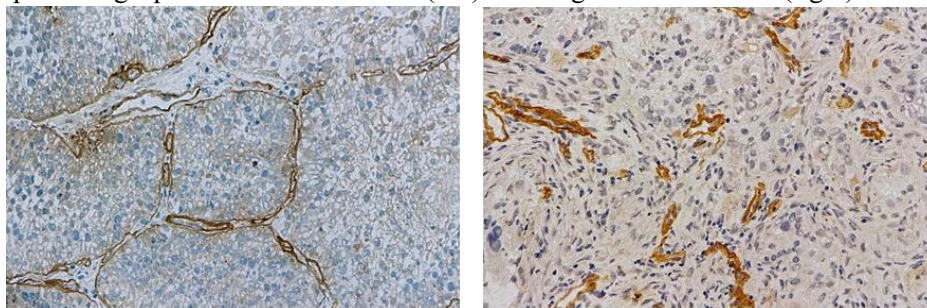
B: Mammary gland basement membrane

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 $\alpha v \beta 3$.

Related products

Catalog No.	Product name	Target	Application
FDV-0023	Anti-Laminin $\alpha 3B$, Human, Mouse-Mono (F7)	Laminin $\alpha 3B$	IHC, WB, IP, ELISA
FDV-0024	Anti-Laminin $\alpha 3A$, Human, Mouse-Mono (BG5)	Laminin $\alpha 3A$	IHC, WB, IP, ELISA
FDV-0025	Anti-Laminin $\gamma 2$ N-terminal fragment, Human, Mouse-Mono (P2H)	Laminin $\gamma 2$ 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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