funakoshi
FRONTIERS IN LIFE SCIENCE

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Anti-Laminin α3B, Human, Mouse-Mono (Clone F7)

Catalog NO. FDV-0023

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. In the case of laminin α3 chain, there are two splicing variants, the truncated form α3A and the full-length α3B. Laminin-3A32 (Lm3A32) (Figure 1 left), formerly called laminin-5 or -5A, is composed of α3A, β3 and γ2 chains and distributed in the skin, esophagus, lung, breast and other epithelial tissues. This laminin has been extensively investigated in cancer biology because of its strong cell adhesion and cell motility activities. It also supports growth and adhesion of some types of stem cells. On the other hand, laminin-3B32 (Lm3B32) (formerly, laminin-5B; Figure 1 right) is composed of α3B, β3 and γ2 chains and less widely expressed than laminin-3A32. Although laminin-3B32 shows higher cell adhesion activity than laminin-3A32 *in vitro*, differences of biological functions between two laminins remain to be clarified. Recent studies identified laminin-3B11 (Lm3B11) as a new α3B-type laminin. Laminin-3B11 is localized in vascular basement membranes in normal tissues, but this expression is down-regulated in cancer tissues. Laminin-3B11 stimulates microvascular endothelial cells to extend lamelliopodial protrusions. Two sister clones BG5 and F7 are separately detect Laminin α3A and α3B, respectively, in immunohistochemistry. Clone F7 is an only commercially available antibody for laminin α3B and can be applied for immunoblotting under both reducing and non-reducing conditions, immunohistochemistry, ELISA and immunoprecipitaiton/immunoaffinity purification. Clone F7 detects laminin-3B32 in the basement membranes of normal epithelial tissues and of relatively benign or differentiated carcinomas and laminin-3B11 in normal vascular basement membranes. Clone F7 is a powerful tool to detect laminin α3B isoform and investigate its fundamental functions in epithelial and vascular basement membranes.

Note: anti-laminin α3A clone BG5 is also available as catalog no. FDV-0024.

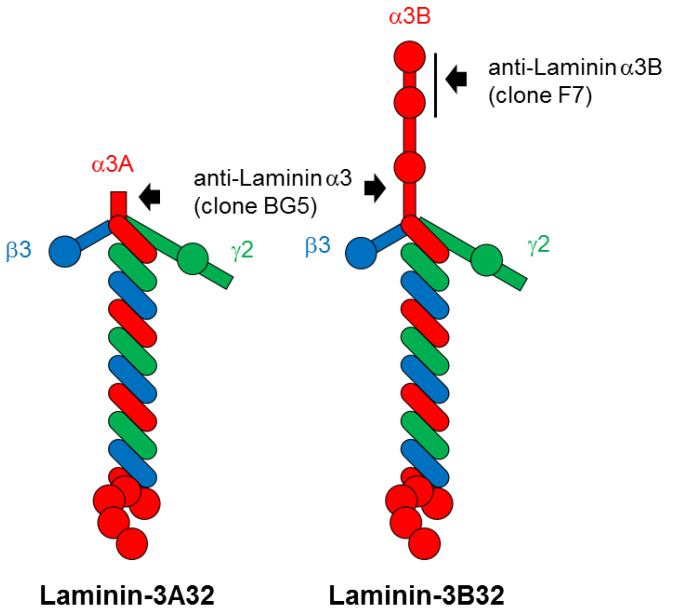


Figure 1. Protein structure of laminin-332s and binding sites of antibodies

Description

Catalog Number : FDV-0023
Format : Mouse ascites
Volume : 100 µL
Formulation : Ascites without any additives
Host Species and Clonality : Mouse monoclonal
Isotype and Subclass : IgG1
Purification : No purification
Lot Number : see vial label
Specificity : Human, other species not tested yet
Storage : For short-term storage, -20ºC. For long-term storage, -80ºC storage is preferable.
Avoid repeated freeze-thaw cycles and avoid storage at 4ºC.

Application

- Western blotting under both reducing, and non-reducing conditions
- Immunohistochemistry with paraffin and frozen sections
- Immunoprecipitaion and immunoaffinity purification
- ELISA

NOTE: The reactivity on reducing conditions of western blotting is much weaker than on non-reducing conditions.

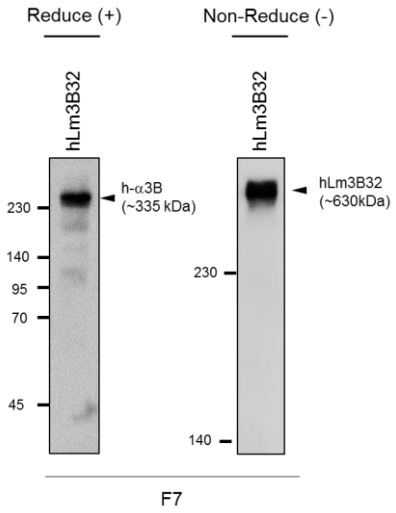
Recommended usage

- Western blotting	1/1,000-1/10,000
- 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

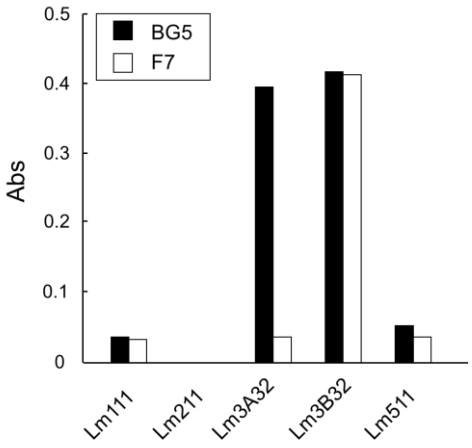
Western blot

Sample : recombinant human intact laminin-3B32 (Lm3B32) containing α3B, β3 and γ2 chains
Gel conc. : Reduced conditions = 7%
Non-reduced conditions = 5%
1st Antibody : clone F7, 1/10,000 dilution
2nd Antibody : anti-mouse IgG (H+L)-HRP conjugate



Validation of specificity by ELISA

Five recombinant human laminins were coated on multi-well plate and detected by clone BG5 and F7. BG5 detects Lm3A32 and Lm 3B32. F7 specifically detects Lm3B32 isoform.

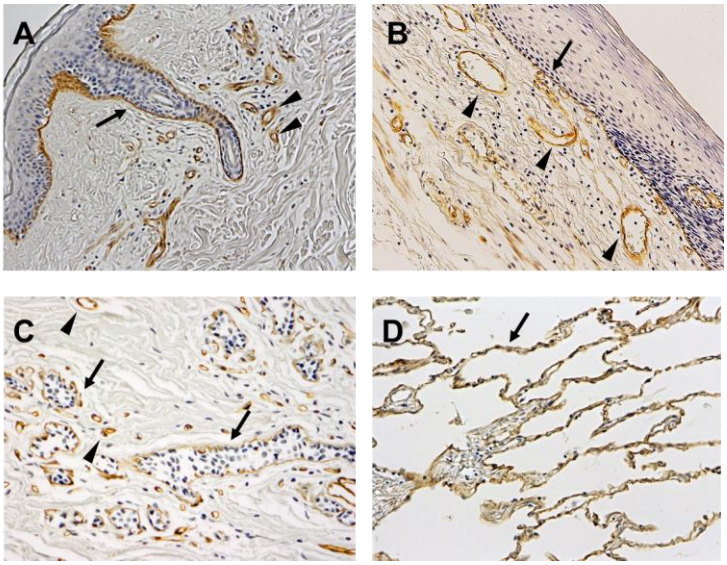


Immunohistochemistry : Normal tissues

Sample: A Normal skin tissue (paraffin slice)
B Normal esophagus tissue (paraffin slice)
C Normal mammary gland (paraffin slice)
D Normal lung tissue (paraffin slice)

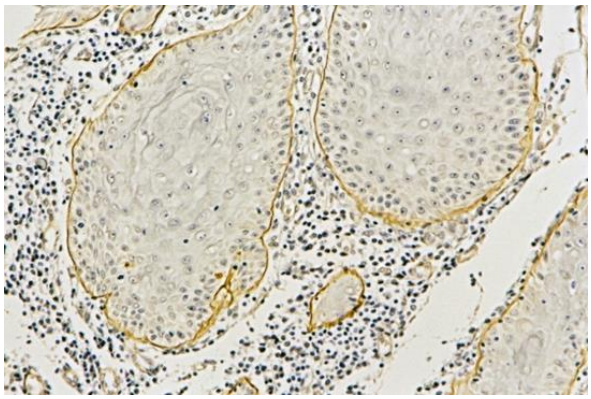
Black arrows: epithelial basement membranes

Arrow heads : vascular basement membrane



Immunohistochemistry : Skin cancer tissue

Sample : Skin cancer tissue



*All data are provided from Dr. Kaoru Miyazaki

Reference

1. Kariya *et al., J. Biol. Chem.*, **279**, 24774-24784 (2004) Characterization of laminin-5B (α3Bβ3γ2) and NH2-terminal proteolytic fragment of its α3B chain: Promotion of cellular adhesion, migration and proliferation.
2. Kariya *et al., J. Mol. Histol.*, **39**, 435-446 (2008) Localization of laminin alpha3B chain in vascular and epithelial basement membranes of normal human tissues and its down-regulation in skin cancers.
3. Mori *et al., J. Biol. Chem.*, **285**, 35068-35078 (2010) Laminin-3B11, a novel vascular type laminin capable of inducing prominent lamellipodial protrusions in microvascular endothelial cells.
4. Mori *et al, Camcer Sci.*, **102**, 1095-1100 (2011) Downregulation of a newly identified laminin, laminin-3B11, in vascular basement membranes of invasive human breast cancers.
5. Miyazaki *et al., Cancer Sci.*, **107**, 1909-1918 (2016) Highly sensitive detection of invasive lung cancer cells by novel antibody against amino-terminal domain of laminin gamma2 chain.

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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