Anti-human Emilin-1 (#1H2/G8)

20210315BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no.:	**101-M09**
Size:	100 µg
Lot. No.:	According to product label
Country of origin:	Germany

Preparation: Monoclonal antibodies were produced with the help of BALB/c mice using recombinant human Emilin-1 produced in HEK293 cells.

Target Background

Synonyms:	Elastin microfibril interface-loctaed protein-2

Emilins (elastin microfibril interface located proteins) are extracellular matrix glycoproteins that localize to sites with proximity to elastin and microfibrils. They consist of an N-terminal cysteine-rich EMI domain and a conserved C-terminal gC1q-like domain. Emilin-1 is abundant in elastin-rich tissues such as blood vessels, skin, heart and lung. It influences placenta formation and initial organogenesis with a later role in interstitial connective tissue. Emilin-2 is larger than Emilin-1 and contains a unique proline-rich domain. It is likely involved in the process of elastogenesis. Multimerin-2 (also known as Emilin-3 or EndoGlyx-1) is expressed during embryonic development. Multimerin-1 (also known as Emilin-4) is expressed in platelets and the endothelium of blood vessels and may act as a carrier protein for platelet factor V. Emilin-5 is encoded by the Emilin-3 gene and is sometimes referred to as Emilin-3. It contains the N-terminal cysteine-rich EMI domain but lacks the C-terminal gC1q-like domain.
Emilin-1 have been shown to be expressed in smooth muscle and other mesenchymal tissues and is localized at the proximity of elastin and microfibrils (10). Emilin-1 exerts an important role in lymphatic system, being a crucial structural molecule that regulates the formation of lymphatic capillaries (4) and collectors (5). Emilin-1 through the interaction with the α4β1 integrin via the C-terminal gC1q domain (3) exerts a negative effect on proliferation (2,3). It binds pro-TGFβ preventing its maturation to mature TGFβ in the extracellular space, therefore influencing the regulation of blood and lymph vessels formation and maintenance (10).

References

1. Capuano A et al. Hum Mutat. 37(1):84-97, 2016
2. Danussi C et al., Cancer Prev Res 2012 Sep;5(9):1131-43
3. Danussi C et al. J Cell Biol, 195(1):131-45, 2011
4. Danussi C et al. Mol Cell Biol, 28(12):4026-39, 2008
5. Danussi C et al. Mol Cell Biol, 33(22): 4381–4394, 2013
6. Doliana R et al. J Biol Chem 274:16773-16781, 1999
7. Pivetta E et al. Matrix Biol. 34:22-32, 2014
8. Spessotto et al. J Cell Sci. 119:4574-84, 2006
9. Spessotto P et al. J Biol Chem. 278:6160-7, 2003
10. Zacchigna L et al. Cell 124:929, 2006
11. Zanetti M. et al. Mol Cell Biol 24:638-650, 2004

Database References Antigen

Protein RefSeq:	NP_008977
Uniprot ID:	Q9Y6C2
mRNA RefSeq:	NM_007046.3

Product Specifications

Species reactivity	human
Clone/Ab feature	$IgG_{2a/kappa}$; 1H2/G8
Cross reactivity	ND
Host	mouse
Clonality	monoclonal
Purification	Protein G purified
Immunogen	recombinant human Emilin-1 protein
Formulation	lyophilized
Buffer	PBS

Stability: The lyophilized antibody is stable at room temperature for up to 1 month. The reconstituted antibody is stable for at least two weeks at 2-8°C. Frozen aliquots are stable for at least 6 months when stored at -20°C.

Reconstitution: Centrifuge vial prior to opening. Reconstitute in sterile water to a concentration of 0.1-1.0 mg/ml.

AVOID REPEATED FREEZE AND THAW CYCLES!

Applications

Western Blot:	Use at 2-5 µg/ml
IF/IHC:	Use at 1-5 µg/ml (IF)
ELISA:	Capture antibody
Others	IP

NOTE: OPTIMAL DILUTIONS SHOULD BE DETERMINED BY EACH LABORATORY FOR EACH APPLICATION!

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Handling/Applications

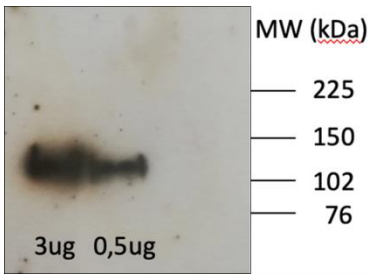

Fig. 1: Western blot analysis of #1H2/G8 antibody on recombinant human EMILIN1 purified from HEK293 transfected cells.

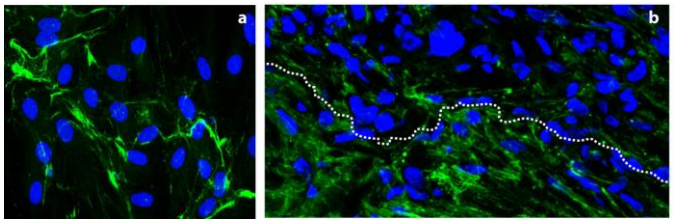

Fig. 2: Immunofluorescence staining of normal cultured cells (skin human fibroblasts) (panel a, left) and of cryostat tissue section (undifferentiated soft tissue sarcoma) (panel b, right) with mAb #1H2G8 [Cat# 101-M09] (green staining). Nuclei are in blue. Dotted lines indicate the border between "normal" (lower corner) and "tumor" tissue.

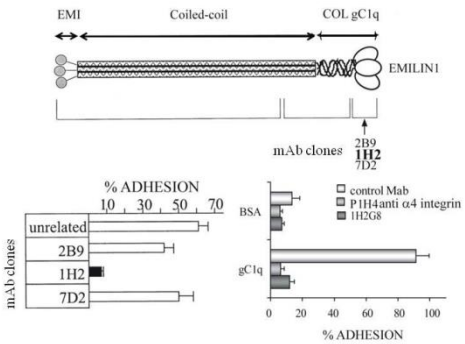

Fig. 3: Function Blocking Activity: Schematic diagram depicting the epitope localization of three clones of anti EMILIN mAbs (from Spessotto et al., 2003). Bottom, left: cell adhesion to EMILIN1 in the presence of anti EMILIN1 mAbs (adapted from Spessotto et al., 2003). Bottom right: levels of cell adhesion to EMILIN1 gC1q domain in the presence of the anti-EMILIN1 mAb 1H2G8 [Cat# 101-M09] or the anti-α4 integrin subunit mAb P1H4 (adapted from Spessotto et al., 2006).

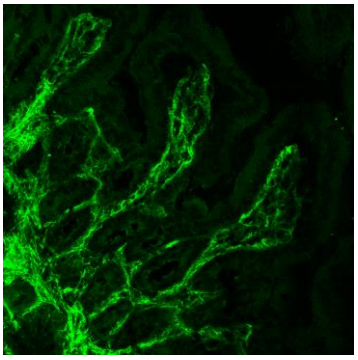

Fig. 4: Immunofluorescence staining of human intestine cryostat sections with the monoclonal mouse anti-human EMILIN1 antibody #1H2/G8 [Cat# 101-M09].

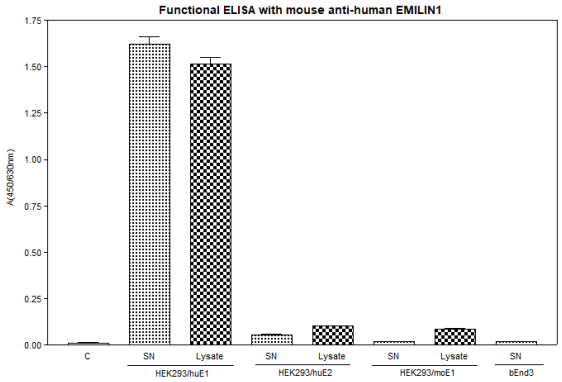

Fig. 5: Functional ELISA: Supernatant (200µl) and total cell lysate (100µl, 1:2 diluted) of HEK293 cells expressing the different EMILIN proteins were coated to a 96-well plate and incubated at 37°C for >1 hour. After blocking and several wash steps the different antibodies were added (2µg/ml) and incubated for another 1 hour. Detection was performed with appropriate secondary antibodies.

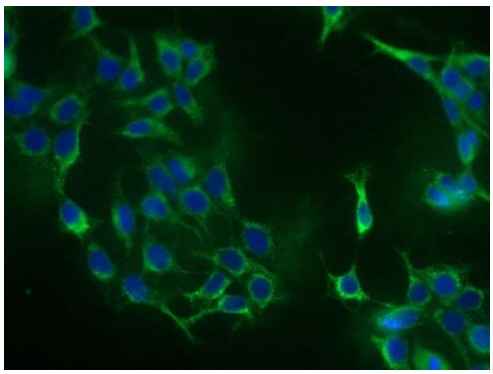

Fig. 6: Immunofluorescence staining of human EMILIN1 in HEK293 cells expressing human EMILIN1 with the monoclonal mouse anti-human EMILIN1 antibody #1H2/G8 [Cat# 101-M09]. Conjugated secondary antibody: goat anti-mouse ALEXA Flour 488 (1:600) [Dianova].