Human EMMPRIN/CD147 Alexa Fluor® 532-conjugated Antibody

Monoclonal Rabbit IgG Clone # 2821A
Catalog Number: FAB9722X
100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human EMMPRIN/CD147 in direct ELISAs.
Source	Monoclonal Rabbit IgG Clone # 2821A
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Human embryonic kidney cell HEK293-derived human EMMPRIN/CD147 protein Glu138-Ala323 Accession # P35613.2
Conjugate	Alexa Fluor 532 Excitation Wavelength: 534 nm Emission Wavelength: 553 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Extracellular matrix metalloproteinase (MMP) inducer (EMMPRIN), also known as basigin and CD147, is a 44-66 kDa, variably N- and O-glycosylated, type I transmembrane protein that belongs to the immunoglobulin superfamily (1-4). Human EMMPRIN is 269 amino acids (aa) in length and contains a 24 aa signal sequence, a 183 aa extracellular domain (ECD), a 21 aa transmembrane (TM) segment and a 41 aa cytoplasmic tail. The ECD contains one C2-type and one V-type Ig-like domain. There is one 385 aa splice variant that contains an extra N-terminal IgCAM domain and is found only in the retina (5). There are additional multiple potential isoform variants for EMMMPRIN. Two that have been characterized are 205 and 176 aa in length. The 176 aa isoform utilizes an alternative start site at Met94, while the 205 aa isoform contains an 11 aa substitution for aa 1-75. Notably, the 176 aa isoform heterodimerizes with the standard EMMPRIN isoform and down-modulates its activity. This is in contrast to EMMPRIN homodimers that show full biological activity (6). EMMPRIN is expressed in areas of tissue remodeling, including endometrium, placenta, skin, and regions undergoing angiogenesis (1, 2, 7-10). It is also expressed on cells with high metabolic activity, such as lymphoblasts, macrophages and particularly tumor cells (2, 11). On such cells, EMMPRIN is often co-expressed with the amino acid transporter CD98h (12). EMMPRIN also interacts with caveolin-1 (via its C2-like domain), and this reduces the level of EMMPRIN glycosylation and subsequent EMMPRIN multimerization and activity (13). In addition, EMMMPRIN is reported to complex with both annexin II and β1 integrins α3 and α6, an interaction that contributes to tumor growth and metastasis (14-16). Finally, the soluble calcium-binding protein S100A9 has now been identified as a ligand for EMMPRIN, and may mediate many of the tumorigenic activities attributed to EMMPRIN (17). EMMPRIN's TM sequence contains a charged aa (Glu), and a Pro important for intracellular interactions with cyclophilins (CyP) (3, 18, 19). CyPA (cyclosporin A receptor) and CyP60 interactions with the TM segment promote leukocyte inflammatory chemotaxis and surface expression of EMMPRIN, respectively (18, 19). An active 22 kDa fragment can be shed from tumor cells by MT1-MMP (1). Tumor cells can also release active, full-length EMMPRIN in microvesicles (20, 21). Functionally, EMMPRIN is known to induce urokinase-type plasminogen activator (uPA), VEGF, hyaluronan and multiple MMPs (1, 2, 8-10). Human EMMPRIN (269 aa) shows 58%, 58%, 62% and 52% aa identity with mouse, rat, cow and chick EMMPRIN, respectively. It also shows 25% and 38% aa identity with the related proteins, embigin and neuroplastin (SDR-1), respectively. SARS-CoV-2 invades host cells via two receptors: angiotensin-converting enzyme 2 (ACE2) and EMMPRIN. Spike protein (SP) from virus binds to ACE2 or EMMPRIN on the host cell, mediating viral invasion and dissemination of virus among other cells (22). EMMPRIN is a second entry receptor for SARS-CoV-2 (22). It is present in multiple cellular types in lung and highly expressed in type II pneumocytes and macrophages at the edges of the fibrotic zones (22). Therefore, the blockade of EMMPRIN could also play a beneficial role in pulmonary fibrosis due to COVID-19 (22).

PRODUCT SPECIFIC NOTICES

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