

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Matrilin-3 in direct ELISAs and Western blots. In direct ELISAs and Western blots, 100% cross-reactivity with recombinant mouse Matrilin-3 is observed and no cross-reactivity with recombinant human (rh) Matrilin-2 or rhMatrilin-4 is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 391934
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Matrilin-3 Asp29-Arg486 Accession # O15232
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.

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

Matrilin-3 is a 50-60 kDa extracellular matrix protein that belongs to the superfamily of von Willebrand factor A (VWA) containing proteins. It is primarily expressed in cartilage and functions as a bridging component between proteins of the collagenous matrix (1-3). The human Matrilin-3 cDNA encodes a 486 amino acid (aa) precursor with a 28 aa signal sequence, an N-terminal VWA domain, four tandem EGF-like repeats, and a C-terminal coiled coil domain (4). The Matrilins differ in the number of VWA domains (one or two) and EGF-like repeats (one, three, four, or ten) they contain. Human Matrilin-3 shares 82% aa sequence identity with mouse Matrilin-3. Within the first VWA domain, human Matrilin-3 shares approximately 55% aa sequence identity with human Matrilin-1, -2, and -4. The coiled coil domain of Matrilin-3 mediates disulfide-linked homo-oligomerization, with tetramer formation being the most dominant (5-7). It can also assemble into hetero-oligomers with Matrilin-1 (5-7). Matrilin-3 is more plentiful than Matrilin-1 in the proliferative zone of the growth plate, whereas the reverse is true in the maturation zone (5). Matrilin-3 interacts directly with Collagen IX and COMP (8, 9). In the absence of Collagen IX, the expression of Matrilin-3 is unchanged, although it is retained inside chondrocytes and is not incorporated into the matrix (9). Matrilin-3 also associates with smaller cartilage fibrils independent of Collagen IX (9). Matrilin-3 knockout mice do not display any obvious abnormalities, suggesting that other molecules may compensate for the lack of Matrilin-3 (10). In contrast, intracellular retention of Matrilin-3 with particular point mutations in the VWA domain results in multiple epiphyseal dysplasia (11-13). A point mutation in the first EGF-like repeat which has been linked to hand osteoarthritis does not prevent Matrilin-3 secretion (13).

PRODUCT SPECIFIC NOTICES

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