Human ADAMTS4 Antibody

Monoclonal Mouse IgG_{2A} Clone # 416610

Catalog Number: MAB4307

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human ADAMTS4 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) ADAMTS1, rhADAMTS5, rhADAMTS13, or rhADAMTSL1.2 is observed.
Source	Monoclonal Mouse IgG_{2A} Clone # 416610
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human ADAMTS4 Phe213-Cys685 Accession # O75173
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

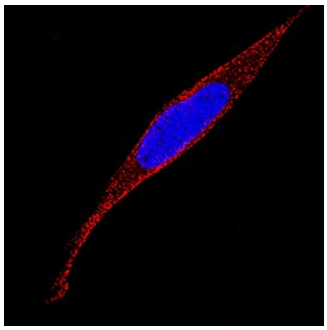
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human ADAMTS4 (Catalog # 4307-AD) under non-reducing conditions only
Immunocytochemistry	8-25 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human ADAMTS4 (Catalog # 4307-AD), see our available Western blot detection antibodies
Neutralization	Measured by its ability to neutralize Recombinant Human ADAMTS4 (5 µg/mL, Catalog # 4307-AD) cleavage of the substrate Recombinant Human Aggrecan G1-IGD-G2 Domain (100 µg/mL, Catalog # 1220-PG). The Neutralization Dose (ND_{50}) is typically 25 µg/mL.	

DATA

Immunocytochemistry



ADAMTS4 in SH-SY5Y Human Cell Line. ADAMTS4 was detected in immersion fixed SH-SY5Y human neuroblastoma cell line using Mouse Anti-Human ADAMTS4 Monoclonal Antibody (Catalog # MAB4307) at 8 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

ADAMTS4 (a disintegrin and metalloproteinase with thrombospondin motifs 4), also known as aggrecanase-1, is a member of the family of secreted zinc proteases with a multi-domain structure (1-3). The protein precursors consist of a signal peptide and the following domains: pro, catalytic, disintegrin-like, TS type 1 motif, cysteine-rich, and spacer. It is the only ADAMTS identified that has one TS type I motif. It is an active protease effectively cleaving α-2-macroglobulin and aggrecan at multiple sites, and is inhibited by TIMP-3 with inhibition constants in subnanomolar range (4-6). It receives great attention due to the elevation in its mRNA level after treatment with Interleukin-1 (7). However, in a mouse model of osteoarthritis, ADAMTS4 knock-out mice did not exhibit any significant protective effect (8). ADAMTS4 consists of a signal peptide (aa 1 to 51), a pro domain (aa 52 to 212) and a mature chain (aa 213 to 837) containing the following domains: catalytic (aa 218 to 425), disintegrin (aa 437 to 519), TSP type-1 (aa 520 to 575), Cys-rich (aa 577 to 685) and spacer (aa 686 to 837). The amino acid sequence of rhADAMTS4 is 100%, 97% and 94% identical to that of chimpanzee, dog, and mouse/rat/bovine.

References:

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