Mouse Endocan/ESM-1 Antibody

Monoclonal Rat IgG_{2B} Clone # 220008

Catalog Number: MAB1999

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Endocan/ESM-1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human Endocan is observed.
Source	Monoclonal Rat IgG_{2B} Clone # 220008
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Endocan/ESM-1 Trp20-Arg184 Accession # Q9QYY7
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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 either lyophilized or as a 0.2 µm filtered solution in PBS.

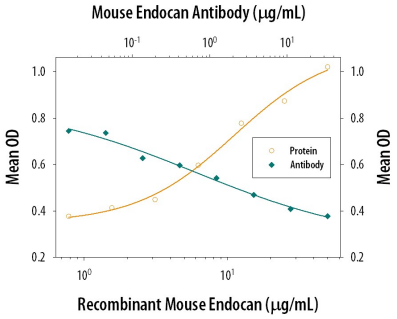
APPLICATIONS

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 Mouse Endocan/ESM-1 (Catalog # 1999-EC) under non-reducing conditions only
Mouse Endocan/ESM-1 Sandwich Immunoassay		**Reagent**
ELISA Capture	2-8 µg/mL	Mouse Endocan/ESM-1 Antibody (Catalog # MAB1999)
ELISA Detection	0.1-0.4 µg/mL	Mouse Endocan/ESM-1 Biotinylated Antibody (Catalog # BAF1999)
Standard		Recombinant Mouse Endocan/ESM-1 (Catalog # 1999-EC)
Neutralization	Measured by its ability to neutralize Endocan/ESM-1-mediated adhesion of the Jurkat human acute T cell leukemia cell line. The Neutralization Dose (ND_{50}) is typically 0.75-3.5 µg/mL in the presence of 25 µg/mL Recombinant Mouse Endocan/ESM-1.	

DATA

Neutralization



Cell Adhesion Mediated by Endocan/ESM-1 and Neutralization by Mouse Endocan/ESM-1 Antibody. Recombinant Mouse Endocan/ESM-1 (Catalog # 1999-EC), immobilized onto a microplate, supports the adhesion of the Jurkat human acute T cell leukemia cell line in a dose-dependent manner (orange line). Adhesion elicited by Recombinant Mouse Endocan/ESM-1 (25 µg/mL) is neutralized (green line) by increasing concentrations of Rat Anti-Mouse Endocan/ESM-1 Monoclonal Antibody (Catalog # MAB1999). The ND_{50} is typically 0.75-3.5 µg/mL.

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

Endocan (endothelial cell proteoglycan), also known as endothelial-cell specific molecule-1 (ESM-1), is a 50 kDa monomeric, secreted, cysteine-rich proteoglycan identified initially in endothelial cells of the kidney and lung (1). Mouse Endocan is synthesized as a 184 amino acid (aa) precursor that contains a 21 aa signal sequence and a 20 kDa, 163 aa mature region (2). The N-terminal 2/3 of the molecule contains 18 cysteine residues and there are no potential N-linked glycosylation sites. Based on human Endocan, there are at least two potential O-linked glycosylation sites, one of which will likely be utilized on Ser at position # 136 of the mature molecule (3). The posttranslational modification is approximately 30 kDa in size. It consists of a single dermatan sulfate chain that contains 4-O sulfated N-acetyl galactosamine with α-iduronate. This chain is suggested to bind HGF and contribute to HGF mitogenic activity (4). Mature mouse Endocan shares 96% and 74% aa identity with rat and human Endocan, respectively. In human, there is a potential for an alternate splice variant. It shows a deletion of aa 82-131, a range which would not remove the dermatan sulfate attachment site (4). It is not known if such a splice form exists in mouse. Endocan is expressed by endothelial cells, adipocytes, bronchial epithelium and distal renal tubular epithelium (1, 5, 6). It is upregulated by TNF-α and VEGF, (1, 7) and is known to bind to LFA-1 (integrin $\alpha_L\beta_2$) on the surface of PBMCs, blocking LFA-1 interaction with ICAM-1 (8). Normal circulating levels of Endocan are approximately 1 ng/mL (6).

References:

1. Lassalle, P. *et al.* (1996) J. Biol. Chem. **271**:20458.
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3. Bechard, D. *et al.* (2001) J. Biol. Chem. **276**:48341.
4. Aitkenhead, M. *et al.* (2002) Microvasc. Res. **63**:159.
5. Wellner, M. *et al.* (2003) Horm. Metab. Res. **35**:217
6. Bechard, D. *et al.* (2000) J. Vasc. Res. **37**:417.
7. Tsai, J.C. *et al.* (2002) J. Vasc. Res. **39**:148.

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