
PRODUCT INFORMATION SHEET

Monoclonal antibodies detecting human antigens

Anti-Human ESM-1 (clone 4E2-A1)

PURE RUO REF IQP-712P VOLUME 0.1 ml à 1.0 mg/ml

RUO **For Research Use Only**



Description

Clone	4E2-A1
Isotype	Mouse IgG2a
Specificity	Recognizes human ESM-1, binding at amino acids 1-88.
Species	Human
Alternative name(s)	Endocan

Antigen distribution

ESM-1 is 184 amino acids long. The 4E2-A1 clone antigen is located between amino acids 1-88.

Summary

Endothelial cell-specific molecule 1 (ESM-1), also known as endocan, was originally discovered by Lassalle and collaborators in endothelial cells¹. Structurally, ESM-1 is a dermatan sulfate proteoglycan of 50 kDa that is freely circulating in blood^{2,3}. ESM-1 binds CD11a/CD18 integrin (also called LFA-1 for Leukocyte Function-associated Antigen-1) on human leukocytes inhibiting consequently its binding to ICAM-1 and transendothelial migration⁴. Moreover, ESM-1 has been recently described as a biomarker of tip cells⁵. The expression of EMS-1 is upregulated by pro-inflammatory molecules such as tumor necrosis factor alpha (TNFa), and pro-angiogenic molecules such as vascular endothelial growth factor (VEGF) and fibroblast growth factor 2 (FGF-2)^{6,7}. ESM-1 binds via its dermatan sulfate chain to hepatocyte growth factor/scatter factor (HGF/SF)^{2,5}. Elevated blood levels of ESM-1 has been reported in patients with lung and kidney cancers as well as in patients with severe sepsis^{4, 8-10}. ESM-1 appears as a pertinent biomarker of endothelial dysfunction⁵.

Applications

Western blot (WB): The anti-human ESM-1 antibody clone 4E2-A1 is recommended to detect human ESM-1 after electrophoresis and immunoblotting. Recommended working dilutions were determined to be 1 µg/mL. Optimal dilutions should be determined according sample origins. Other applications: to be determined.

Usage

These reagents are effectively formulated for Western Blot. Since applications vary, each investigator should titrate the reagent to obtain optimal results.

Purity

Purity > 90%, as determined by SDS-PAGE and as visualized by silver staining.



Handling and Storage

Antibodies are supplied in 0.01 M sodium phosphate, 0.15 M NaCl; pH 7.3, 0.2% BSA, 0.09% sodiumazide (NaN₃). Store the vials at 2-8 °C. Reagents are stable for the period shown on the vial label when stored properly.

Warranty

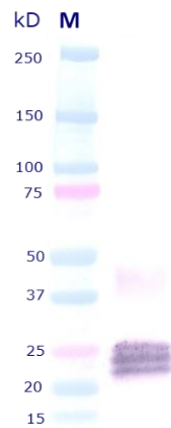
Products sold hereunder are warranted only to conform to the quantity and contents stated on the label at the time of delivery to the customer. There are no warranties, expressed or implied, which extend beyond the description on the label of the product. IQ Products is not liable for property damage, personal injury, or economic loss caused by the product.

Characterization

To ensure consistently high-quality reagents, each batch of monoclonal antibody is tested for conformance with characteristics of a standard reagent.

Representative Data











Recombinant human ESM-1 protein (24-27 kDa)



References

1. Lassalle et al. (1996). ESM-1 is a novel human endothelial cell-specific molecule expressed in lung and regulated by cytokines. *J. Biol. Chem.* 271:20458-20464.
2. Bechard et al. (2001a). Endocan is a novel CS/DS proteoglycan that promotes HGF/SF mitogenic activity. *J. Biol. Chem.* 276:48341-48349.
3. Sarrazin et al. (2010a). Characterization and binding activity of the chondroitin/dermatan sulfate chain from endocan, a soluble endothelial proteoglycan. *Glycobiology.* 20:1380-1388.
4. Bechard et al. (2001b). Human ESM-1 binds directly to the integrin CD11a/CD18 (LFA-1) and blocks binding to ICAM-1. *J. Immunol.* 167:3099-3106.
5. Sarrazin et al. (2010b). Endocan as a biomarker of endothelial dysfunction in cancer. *J. Canc. Sci. Ther.* 2:47-52.
6. Sarrazin et al. (2006). Endocan or endothelial cell specific molecule-1 (ESM-1): a potential novel endothelial cell marker. *BBA Reviews* 1765:25-37.
7. Maurage et al. (2009). Endocan expression and localization in human glioblastomas. *J. Neuropathol. Exp. Neurol.* 68:836-844.
8. Scherpereel et al. (2003). Overexpression of endocan induces tumor formation. *Cancer Res.* 63:6084-6089.
9. Scherpereel et al. (2006). Endocan, a new endothelial marker in human sepsis. *Crit. Care Med.* 34:532-537.
10. Leroy et al. (2010). Vascular endocan (ESM-1) is markedly overexpressed in clear cell renal cell carcinoma. *Histopathology* 56:180-187.

Explanation of used symbols

	Consult instructions for use
	Catalogue number
	Caution, consult accompanying document
	Keep away from (sun)light
	Biological risks
	Temperature limitation (°C)
	For Research Use Only
	Batch code
	Use by yyyy-mm-dd
	Manufacturer



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