Anti-Human Endocan/ESM-1 biotinylated Monoclonal Antibody

Clone MEP08 (N-Ter)

Essential Notes

Cat. Number : LIA-0901-BB

Clone : MEP08

Size : 50 µg

Formulation : PBS pH 7.4

Storage : 4°C / -20°C

Immunogen : *E. coli* derived C-Ter peptide (60-165)

Specificity : human, monkey and chicken endocan

Source : mouse

Ig isotype : IgG2a, K

Applications : ELISA

For research use only

Preparation/source

Endocan/ESM-1 is a 165 amino acide peptide that carries a dermatan sulfate chain. Anti-endocan/ESM-1 antibodies clone MEP08 were produced from a hybridoma resulting from the fusion of mouse myeloma Sp2/0 cells with B cells obtained from mouse immunized with a *E. coli* derived C-terminal peptide (60-165) from recombinant human endocan (Lassalle et al. 1996; Bechard et al. 2000). They were purified by protein A affinity chromatography.

Formulation

Solution in phosphate buffer saline 1x, pH 7.4

Concentration

The concentration of MEP08 was 1 mg/mL as determined by measurement of protein and mouse IgG concentration.

Purity

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

Specificity & Bioactivity

Specificity is determined by ability to recognize **human, monkey and chicken endocan.**
Prevent *in vitro* adhesion of Jurkat cells (neutralizing activity).

Storage

Antibody can be stored at 2°C - 8°C for 6 months without loss of activity. They can be easily aliquoted and stored frozen from -20°C to -80°C for long term storage. Avoid repeated freeze-thaw cycles.

Applications

Elisa : Optimal dilutions should be determined according tissue origins.

Other : to be determined.

Bibliography related to MEP08 Antibody Applications

Bechard et al. (2000) Characterization of the secreted form of ESM-1 by specific monoclonal antibodies. J. Vasc. Res. 37:417-425.
Carrillo et al. (2011) Immunolocalization of endocan during the endothelial-mesenchymal transition process. Eur. J. Histochem. 55:73-77.
Grigoriu et al. (2006) Endocan expression and relationship with survival in human non-small cell lung cancer. Clin. Cancer Res. 12:4575-4582.
Leroy et al. (2010) Vascular endocan (ESM-1) is markedly overexpressed in clear cell renal cell carcinoma. Histopathology 56:180-187.
Maurage et al. (2009) Endocan expression and localization in human glioblastomas. J. Neuropathol. Exp. Neurol. 68:836-844.

BACKGROUND

Endocan, also known as endothelial cell-specific molecule (ESM-1), was originally discovered by Lassalle and collaborators in endothelial cells (Lassalle et al. 1996). Structurally, endocan is a dermatan sulfate proteoglycan of 50 kDa that is freely circulating in blood (Bechard et al. 2001a; Sarrazin et al. 2010a). Endocan 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 migration (Bechard et al. 2001b). Moreover, endocan has been recently described as a biomarker of tip cells and neoangiogenesis (Sarrazin et al. 2010b). The expression of endocan is upregulated by pro-inflammatory molecules such as tumor necrosis factor alpha (TNFα), and pro-angiogenic molecules such as vascular endothelial growth factor (VEGF) and fibroblast growth factor 2 (FGF-2) (Grigoriu et al. 2006; Sarrazin et al. 2006; Maurage et al. 2009). Endocan binds via its dermatan sulfate chain to hepatocyte growth factor/scatter factor (HGF/SF) (Bechard et al. 2001a; Sarrazin et al. 2010b). Elevated blood levels of endocan has been reported in patients with lung and kidney cancers as well as in patients with severe sepsis (Bechard et al. 2001b; Scherpereel et al. 2003; Grigoriu et al. 2006; Scherpereel et al. 2006; Sarrazin et al. 2010b; Leroy et al. 2010). Endocan appears as a pertinent biomarker of endothelial dysfunction (Sarrazin et al. 2010b).

Endocan Background Bibliography

Abid et al. (2006) Vascular endocan is preferentially expressed in tumor endothelium. *Microvasc. Res*. 72:136-145.
Bechard et al. (2001a) Endocan is a novel CS/DS proteoglycan that promotes HGF/SF mitogenic activity. *J. Biol. Chem*. 276:48341-48349.
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.
Lassalle et al. (1996) ESM-1 is a novel human endothelial cell-specific molecule expressed in lung and regulated by citokines. *J. Biol. Chem*. 271:20458-20464.
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Maurage et al. (2009) Endocan expression and localization in human glioblastomas. *J. Neuropathol. Exp. Neurol.* 68:836-844.
Sarrazin et al. (2006) Endocan or endothelial cell specific molecule-1 (ESM-1): a potential novel endothelial cell marker. *BBA Reviews* 1765:25-37.
Sarrazin et al. (2010a) Characterization and binding activity of the chondroitin/dermatan sulfate chain from Endocan, a soluble endothelial proteoglycan. *Glycobiology.* 20:1380-1388.
Sarrazin et al. (2010b) Endocan as a biomarker of endothelial dysfunction in cancer. *J. Canc. Sci. Ther*. 2:47-52.
Scherpereel et al. (2003) Overexpression of endocan induces tumor formation. *Cancer Res.* 63:6084-6089.
Scherpereel et al. (2006) Endocan, a new endothelial marker in human sepsis. *Crit. Care Med*. 34:532-537.
Tsai et al. (2002) Cloning and characterization of the human lung ESM-1 promoter. *J. Vasc. Res*. 39:148-159.

Companion products

- Anti-human endocan/ESM-1 mAb (C-ter) ; clone MEP14 : **LIA-1001**
- Anti-murine endocan/ESM-1 mAb (N-ter) ; clone GGR222 : **LIA-0905**
- Anti-human endocan/ESM-1 mAb (N-ter) ; clone MEP21 : **LIA-0902**
- Human recombinant endocan/ESM-1 (50 kDa) : **LIP-1001**
- DIYEK EndoMark H1 (ImmunoAssay against human endocan) : **LIK-1101**

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