



# Murine Endocan Standard (50 kDa)

## Lyophilized Murine Endocan

### Essential Notes

**Cat. Number :** LIP-1104

**Biomolecule :** endocan

**Formulation :** Lyophilized from a solution without protein carrier

**Storage :** +4°C

**Applications :** ELISA

FOR RESEARCH USE ONLY

### Description

Endocan also called endothelial cell specific molecule-1 (ESM-1) is a proteoglycan secreted by endothelial cells, and up-regulated by proangiogenic factors (VEGF, FGF-2) and pro-inflammatory cytokines (TNF- $\alpha$ , IL-1). Endocan plays a role in the angiogenesis and neovessel formation in association with VEGF, in the control of inflammation by inhibiting the leukocyte diapedesis, and in the regulation of the cellular proliferation by regulating growth factor activities through its glycan.

### Source

The recombinant mouse Endocan / ESM-1 is produced by a HEK293 cell line overexpressing mouse Endocan / ESM-1. Recombinant mouse Endocan was then purified by sequential ion exchange chromatography followed by affinity chromatography.

### Molecular Mass

As a result of post-translational modification, mouse Endocan / ESM-1 is secreted as a 50 kDa proteoglycan.

### Formulation

Lyophilized from a solution without protein carrier.

### Reconstitution

Reconstitute at 200 ng/mL in PBS containing at least 0.1% bovine serum albumin. We recommend to reconstitute the lyophilized murine endocan standard with 1X Buffer B (LIM-1201).

### Storage

Upon reception, store at +4°C.  
After reconstitution, store at -20 to -80°C and avoid repeated freeze-thaw cycles.

### Applications

**ELISA :** Can be used for the quantification of murine endocan in serum or culture supernatant as a standard.

## ■ Bibliography related to endocan

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- Gaudet A, et al. Cleaved endocan acts as a biologic competitor of endocan in the control of ICAM-1-dependent leukocyte diapedesis. *J Leukoc Biol.* 2020 May;107(5):833-841.
- Gaudet A, et al. Decrease of the plasmatic endocan cleavage ratio is associated with the hyperinflammatory phenotype of acute respiratory distress syndrome. *Crit Care.* 2019 Jul 11;23(1):252.
- Gaudet A, et al. Endocan regulates acute lung inflammation through control of leukocyte diapedesis. *J Appl Physiol* (1985). 2019 Sep 1;127(3):668-678.
- Ying J, Zhou D, Gu T, Huang J. Endocan, a Risk Factor for Developing Acute Respiratory Distress Syndrome among Severe Pneumonia Patients. *Can Respir J.* 2019 Apr 1;2019:2476845.
- Gaudet A, et al. Parmentier E, De Freitas Caires N, Portier L, Dubucquoi S, Poissy J, Duburcq T, Hureau M, Lassalle P, Mathieu D. Impact of acute renal failure on plasmatic levels of cleaved endocan. *Crit Care.* 2019 Feb 19;23(1):55
- De Freitas Caires N, et al. Endocan, sepsis, pneumonia, and acute respiratory distress syndrome. *Crit Care.* 2018 Oct 26;22(1):280.
- Yassine H, et al. The non-glycanated endocan polypeptide slows tumor growth by inducing stromal inflammatory reaction. *Oncotarget.* 2015 Feb 20;6(5):2725-35.
- De Freitas Caires N, et al. Identification of a 14 kDa endocan fragment generated by cathepsin G, a novel circulating biomarker in patients with sepsis. *J Pharm Biomed Anal.* 2013 May 5;78-79:45-51.
- Depontieu F, et al. Development of monoclonal antibodies and ELISA specific for the mouse vascular endocan. *J Immunol Methods.* 2012 Apr 30;378(1-2):88-94.
- Depontieu F, et al. Loss of Endocan tumorigenic properties after alternative splicing of exon 2. *BMC Cancer.* 2008 Jan 18;8:14.
- Bechard D, et al. Characterization of the secreted form of endothelial-cell-specific molecule 1 by specific monoclonal antibodies. *J Vasc Res.* 2000 Sep-Oct;37(5):417-25.

## ■ Background

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Endocan, also known as endothelial cell-specific molecule (ESM-1), was originally discovered by Lassalle and collaborators in endothelial cells. Structurally, endocan is a dermatan sulfate proteoglycan of 50 kDa that is freely circulating in blood. 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. Moreover, endocan has been recently described as a biomarker of tip cells and neoangiogenesis. The expression of endocan is upregulated by pro-inflammatory molecules such as tumor necrosis factor alpha, and pro-angiogenic molecules such as vascular endothelial growth factor and fibroblast growth factor 2. Endocan binds via its dermatan sulfate chain to hepatocyte growth factor/ scatter factor. Endocan appears as a pertinent biomarker of endothelial dysfunction.

## ■ Companion products

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- DIYEK M1 (Do It Yourself Elisa Kit for Human Endocan quantification) : [LIK-1102](#)
- DIYEK R1 (Do It Yourself Elisa Kit for Human Endocan quantification) : [LIK-1103](#)
- Anti-mouse endocan/ESM-1 (N-ter) ; clone GGR222 : [LIA-0905](#)
- Anti-mouse endocan/ESM-1 (N-ter) ; clone GGR237 : [LIA-1101](#)

**Not intended for use as a therapeutic agents or in diagnostic procedures. Not for use in humans or animals.**