**Purified Dermatan / Chondroitin B Sulfate Chains**  
**From Human Recombinant Endocan / ESM-1**

### Description
Endocan also called endothelial cell specific molecule 1 (ESM-1) is a proteoglycan of 50 kDa carrying a unique chain of glycosaminoglycan of chondroitin B / dermatan sulfate type (Bechard et al. 2001; Sarrazin et al. 2010). Endocan / ESM-1 binds through its DS / CS chain to pro-angiogenic molecules such as HGF/SF and regulated their activity. This CS / DS proteoglycan is a biomarker of endothelial dysfunction in cancer and sepsis.

### Source
Dermatan sulfate chains from purified human recombinant endocan / ESM-1 were released from the core protein by β-elimination, purified by successive ion-exchange and gel filtration chromatographies as described in Sarrazin et al. 2010a.

### Quantity
50 µg per vial.

### Formulation
In a solution in phosphate buffer saline (PBS) pH7.4. The DS specific, IdoA-containing disaccharides contribute 30% of the chain (15% of which are 2-O-sulfated) and are mostly clustered in tetra- (35%), hexa- (12%), and octa- (5%) saccharide domains.

### Storage
We recommend that all products should be stored at -20°C upon receipt. If made up into solutions, avoid repeated freeze-thaw cycles. Stock solutions should be prepared in appropriate aliquots and stored frozen.

### Applications
- **Bioassays**
- **Molecular interactions**

Optimal dilutions should be determined for each application by end-user.
References


BACKGROUND

Endocan, also known as endothelial cell-specific molecule (ESM-1), was originally discovered in endothelial cells from the lungs by Lassalle and collaborators (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 / 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 migration (Bechard et al. 2001b; De Freitas Caires et al. 2009). Moreover, endocan / ESM-1 has been recently described as a biomarker of tip cells (Sarrazin et al. 2010b). The expression of endocan / ESM-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) (Grigoriu et al. 2006; Sarrazin et al. 2006; Maurage et al. 2009). Endocan / ESM-1 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 / ESM-1 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 Background Bibliography

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.

Companion products

- Anti-human endocan/ESM-1 mAb (C-ter) ; clone MEP14 : LIA-1001
- Anti-human endocan/ESM-1 mAb (N-ter) ; clone MEP21 : LIA-0902
- DIYEK EndoMark H1 (ImmunoAssay against human endocan) : LIK-1101
- Human recombinant endocan/ESM-1 50 kDa : LIP-1001
- Human recombinant endocan/ESM-1 20 kDa : LIP-1002