APC463Hu01 500μg
Active Endothelial Cell Specific Molecule 1 (ESM1)
Organism Species: Homo sapiens (Human)
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Trp20~Arg184
Tags: N-terminal His-tag
Purity: >92%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% SKL, 5% Trehalose.
Original Concentration: 1000μg/mL
Applications: Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 6.7
Predicted Molecular Mass: 19.4kDa
Accurate Molecular Mass: 19&44kDa as determined by SDS-PAGE reducing conditions.
Phenomenon explanation:
The possible reasons that the actual band size differs from the predicted are as follows:
1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[USAGE]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.

Store at 2-8ºC for one month.

Aliquot and store at -80ºC for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37ºC for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

W SNNYAVDCPQ HCDSSECKSS PRCKRTVLDD
CGCCRVCAAG RGETCYRTVS GMDGMKCGPG LRCQPSNGED PFGEEFGICK
DCPYGTFGMD CRETCNCQSG ICDRGTGKCL KFPFFQYSVT KSSNRFVSLT
EHDMASGDGN IVREEVVKEN AAGSPVMRKW LNPR

[ACTIVITY]

Endothelial cell-specific molecule 1 (ESM1) is a proteoglycan secreted by endothelial cells (primarily in the human lung and kidney tissues) and its mRNA expression is regulated by inflammatory cytokines. Endocan expression, which detected in various epithelia and adipocytes has been shown to be upregulated by vascular endothelial growth factor (VEGF), fibroblast growth factor 2 (FGF-2), TNF alpha, IL1 beta, or lipopolysaccharide and downregulated by IFN gamma. Genetically engineered cells overexpressing ESM1 induce tumor formation, implying that ESM1 might be involved in the pathophysiology of tumor growth in vivo. Besides, Lymphocyte Function Associated Antigen 1 Alpha (LFA1a) has been identified as an interactor of ESM1, thus a binding ELISA assay was conducted to detect the interaction of recombinant human ESM1 and recombinant human LFA1a. Briefly, ESM1 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100uL were then transferred to LFA1a-coated microtiter wells and incubated for 2h at 37℃. Wells were washed with PBST and incubated for 1h with anti- ESM1 pAb, then aspirated and washed 3 times. After incubation

with HRP labelled secondary antibody, wells were aspirated and washed 3 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50μL stop solution to the wells and read at 450nm immediately. The binding activity of of ESM1 and LFA1a was shown in Figure 1, and this effect was in a dose dependent manner.

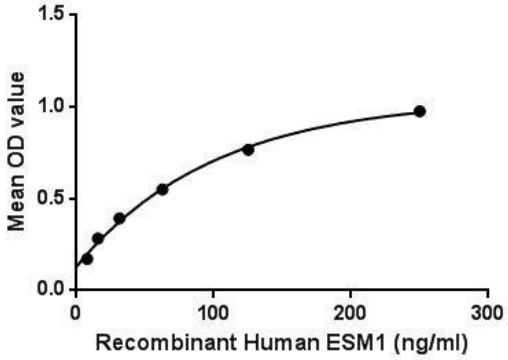

Figure 1. The binding activity of ESM1 with LFA1a.

[IDENTIFICATION]

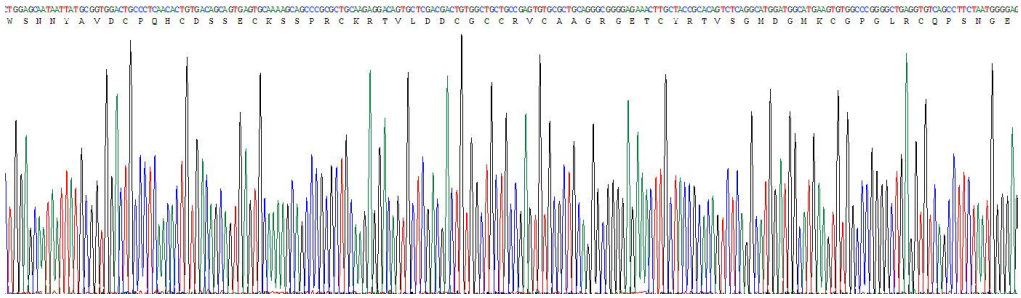

Figure 2. Gene Sequencing (extract)

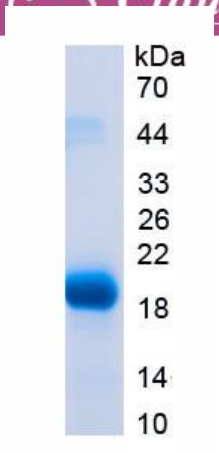

Figure 3. SDS-PAGE

Sample: Active recombinant ESM1, Human

[IMPORTANT NOTE]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.