Data Sheet (Cat.No.TMPY-02999)

TargetMol

BCAM Protein, Rat, Recombinant (His)

General Information

Synonyms:	basal cell adhesion molecule (Lutheran blood group)
Protein Construction:	A DNA sequence encoding the rat BCAM (Q9ESS6) (Met1-Ala543) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Glu 26
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	Q9ESS6
Molecular Weight:	58.2 kDa (predicted); 68 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by the ability of the immobilized protein to support the adhesion of HOS human osteogenic sarcoma cells. When cells are added to coated plates(10 μg/mL,100μL/well), approximately 20-50% will adhere after 1 hour at 37℃.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The Lutheran (Lu) blood group and basal cell adhesion molecule (BCAM) antigens are both carried by 2 glycoprotein isoforms of the immunoglobulin superfamily representing receptors for the laminin alpha(5) chain. It is a transmembrane receptor with five immunoglobulin-like domains in its extracellular region, and is therefore classified as a member of the immunoglobulin (Ig) gene family. In addition to red blood cells, Lu/BCAM proteins

are expressed in endothelial cells of vascular capillaries and in epithelial cells of several tissues. BCAM/LU has a wide tissue distribution with a predominant expression in the basal layer of the epithelium and the endothelium of blood vessel walls. As designated as CD239 recently, BCAM and LU share a significant sequence similarity with the CD146 (MUC18) and CD166, and themselves are adhesion molecules that bind laminin with high affinity. Laminins are found in all basement membranes and are involved in cell differentiation, adhesion, migration, and proliferation. BCAM is upregulated following malignant transformation of some cell types in vivo and in vitro, thus being a candidate molecule involved in tumor progression. In addition, BCAM interacts with integrin in sickle red cells, and thus may potentially play a role in vaso-occlusive episodes.

Reference

Kikkawa Y,et al.(2005) Review: Lutheran/B-CAM: a laminin receptor on red blood cells and in various tissues. Connect Tissue Res. 46 (4-5): 193-9.

El Nemer W,et al.(2007) Endothelial Lu/BCAM glycoproteins are novel ligands for red blood cell alpha4beta1 integrin: role in adhesion of sickle red blood cells to endothelial cells. Blood. 109 (8): 3544-51.

Colin Y,et al.(2008) Red cell and endothelial Lu/BCAM beyond sickle cell disease. Transfus Clin Biol. 15 (6): 402-5.

El Nemer W,et al.(2008) Role of Lu/BCAM in abnormal adhesion of sickle red blood cells to vascular endothelium. Transfus Clin Biol. 15 (1-2): 29-33.

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