Data Sheet (Cat.No.TMPY-03235)

TargetMol

BST2 Protein, Human, Recombinant (His)

General Information

Synonyms:	bone marrow stromal cell antigen 2;CD317;TETHERIN
Protein Construction:	A DNA sequence encoding the human BST2 (Q10589) (Asn49-Ser160) was expressed, with an N-terminal polyhistidine tag. Predicted N terminal: His
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q10589
Molecular Weight:	14.9 kDa (predicted); 23-26 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % 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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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

BST2 was frequently overexpressed in GC tissues compared with the adjacent non-tumorous tissues, and high BST2 expression was correlated with tumor stage and lymphatic metastasis. Furthermore, in vitro experiments demonstrated that knockdown of BST2 by siRNA inhibited cell proliferation, induced apoptosis and repressed cell motility in GC cells. In addition, the pro-tumor function of BST2 in GC was mediated partly through the NF-κB signaling. BST2 possesses the oncogenic potential in GC by regulating the proliferation, apoptosis, and migratory

ability of GC cells, thereby BST2 could be a potential therapeutic target for the treatment of GC. IFN (interferon)-induced BST2 recruits the E3 ubiquitin ligase MARCH8 to catalyze the K27-linked ubiquitination of MAVS for CALCOCO2-directed autophagic degradation, hence inhibiting DDX58-mediated type I interferon signaling through a negative feedback loop. BST2 is a host protein with dual functions in response to viral infections: it traps newly assembled enveloped virions at the plasma membrane in infected cells, and it induces NF-κB activity, especially in the context of retroviral assembly. BST2 may induce or amplify proinflammatory signaling during Ebola virus infection, potentially contributing to the dysregulated cytokine response that is a hallmark of Ebola virus disease.

Reference

Ishikawa J, et al. (1995) Molecular cloning and chromosomal mapping of a bone marrow stromal cell surface gene, BST2, that may be involved in pre-B-cell growth. Genomics. 26 (3): 527-34.
Viswanathan K, et al. (2011) BST2/Tetherin enhances entry of human cytomegalovirus. PLoS Pathog. 7(11): e1002332.
Gifford RJ. (2011) No trespassing: ancient BST2 deletion confers protection against simian immunodeficiency virus infection of humans. Hum Mutat. 32(11).