Data Sheet (Cat.No.TMPY-06912)

TargetMol

PU.1/SPI1 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	Tfpu.1;Dis-1;Tcfpu1;Spi-1;Sfpi-1;Dis1;PU.1;Sfpi1;spleen focus forming virus (SFFV) proviral integration oncogene
Protein Construction:	A DNA sequence encoding the Mouse SPI1 (P17433) (Met1-His272) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Mouse
Expression Host:	E. coli
Accession:	P17433
Molecular Weight:	32.31 kDa (predicted)

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, 0.05% SKL. 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

SPI1 (also known as PU.1) is a dominant but transient regulator in early T-cell precursors and a potent transcriptional controller of developmentally important pro-T-cell genes. SPI1 is an essential transcription factor (TF) for the hematopoietic lineage, in which its expression is tightly controlled through a -17-kb upstream regulatory region and a promoter region. The E26 transformation-specific (ETS) family transcription factor PU.

1/Spi1 acts as a master regulator of myeloid and lymphoid development. PU.1-deficient mice show a complete loss of microglia, indicating that PU.1 plays a pivotal role in micro-gliogenesis. The Spi1/PU.1 transcription factor is a key regulator of many steps of hematopoiesis, and limits self-renewal of hematopoietic stem cells. The deregulation of its expression or activity contributes to leukemia, in which Spi1 can be either an oncogene or a tumor suppressor.

Reference

Ungerbäck J,et al.(2018) Pioneering, chromatin remodeling, and epigenetic constraint in early t-cell gene regulation by spi1 (pu.1). Genome Res 28 (10): 1508-1519.

Satoh J,et al.(2014) A comprehensive profile of chip-seq-based pu.1/spi1 target genes in microglia. Gene Regul Syst Bio 8 127-139.

Goyal S,et al.(2017) Runx1 induces DNA replication independent active DNA demethylation at spi1 regulatory regions. BMC Mol Biol 18 (1): 9.

Delestré L,et al.(2017) Senescence is a spi1-induced anti-proliferative mechanism in primary hematopoietic cells. Haematologica 102 (11): 1850-1860.