Data Sheet (Cat.No.TMPY-02228)

TargetMol

p53 Protein, Cynomolgus, Recombinant

General Information

Synonyms:	tumor protein p53;p53;TP53
Protein Construction:	A DNA sequence encoding the Cynomolgus (Macaca fascicularis) p53 (E3U906) (Met 1-Asp 393) was expressed and purified. Predicted N terminal: Met 1
Species:	Cynomolgus
Expression Host:	E. coli
Accession:	E3U906
Molecular Weight:	43.7 kDa (predicted); 48 kDa (reducing conditions)

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:	> 80 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 100 mM Tris, 3% glycerol, 4 mM DTT, pH 8.0.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

p53, also known as Tp53, is a DNA-binding protein which belongs to the p53 family. It contains transcription activation, DNA-binding, and oligomerization domains. p53 protein is expressed at low level in normal cells and at a high level in a variety of transformed cell lines, where it's believed to contribute to transformation and malignancy. p53 (TP53) is a transcription factor whose protein levels and post-translational modification state alter in response to cellular stress (such as DNA damage, hypoxia, spindle damage). Activation of p53 begins

through a number of mechanisms including phosphorylation by ATM, ATR, Chk1 and MAPKs. MDM2 is a ubiquitin ligase that binds p53 and targets p53 for proteasomal degradation. Phosphorylation, p14ARF and USP7 prevent MDM2-p53 interactions, leading to an increase in stable p53 tetramers in the cytoplasm. Further modifications such as methylation and acetylation lead to an increase in Tp53 binding to gene specific response elements. Tp53 regulates a large number of genes (>100 genes) that control a number of key tumor suppressing functions such as cell cycle arrest, DNA repair, senescence and apoptosis. Whilst the activation of p53 often leads to apoptosis, p53 inactivation facilitates tumor progression. It is postulated to bind to a p53-binding site and activate expression of downstream genes that inhibit growth and/or invasion, and thus function as a tumor suppressor. Mutants of p53 that frequently occur in a number of different human cancers fail to bind the consensus DNA binding site, and hence cause the loss of tumor suppressor activity. Defects in TP53 are a cause of esophageal cancer, Li-Fraumeni syndrome, lung cancer and adrenocortical carcinoma.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Bakhrat A, et al. (2010) Drosophila Chk2 and p53 proteins induce stage-specific cell death independently during oogenesis. Apoptosis. 15(12):1425-34.

Kurzhals RL, et al. (2011) Chk2 and p53 are haploinsufficient with dependent and independent functions to eliminate cells after telomere loss. PLoS Genet. 7(6):e1002103.

Pardi N, et al. (2011) In vivo effects of abolishing the single canonical sumoylation site in the C-terminal region of Drosophila p53. Acta Biol Hung. 62(4):397-412.

Wells BS, et al. (2012) Maintenance of imaginal disc plasticity and regenerative potential in Drosophila by p53. Dev Biol. 361(2):263-76.