Data Sheet (Cat.No.TMPY-03011)

TargetMol

USP46 Protein, Human, Mouse, Recombinant

General Information

Synonyms:	ubiquitin specific peptidase 46
Protein Construction:	A DNA sequence encoding the human / mouse USP46 [(Identical to the mouse USP46 (NP_808229.1)] (Met1-Glu366) was expressed. Human and Mouse USP46 sequences are identical. Predicted N terminal: Met
Species:	Human,Mouse
Expression Host:	Baculovirus Insect Cells
Accession:	P62069
Molecular Weight:	42.4 kDa (predicted); 43 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 20 mM Tris, 500 mM NaCl, pH 7.4, 10% gly. 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

USP46 belongs to the peptidase C19 family, USP12/USP46 subfamily. Deubiquitinating enzymes (DUBs) are a large group of proteases which are also commonly referred to as deubiquitinating peptidases, deubiquitinating isopeptidases, deubiquitinases, ubiquitin proteases, ubiquitin hydrolyases, ubiquitin isopeptidases, or Dubs. They regulate ubiquitin-dependent metabolic pathways by cleaving ubiquitin-protein bonds. They also may act as

negative and positive regulators of the ubiquitin system. Besides ubiquitin recycling, they are also involved in processing of ubiquitin precursors, in proofreading of protein ubiquitination and in disassembly of inhibitory ubiquitin chains. USP46 is a deubiquitinating enzyme that plays a role in behavior, possibly by regulating GABA action. It may act by mediating the deubiquitination of GAD1/GAD67. USP46 has almost no deubiquitinating activity by itself and requires the interaction with WDR48 to have high activity and it is not involved in deubiquitination of monoubiquitinated FANCD2.

Reference

Joo HY, et al. (2011) Regulation of histone H2A and H2B deubiquitination and Xenopus development by USP12 and USP46. J Biol Chem. 286(9):7190-201.

Kushima I, et al. (2010) Association study of ubiquitin-specific peptidase 46 (USP46) with bipolar disorder and schizophrenia in a Japanese population. J Hum Genet. 55(3):133-6.

Cohn MA, et al. (2009) UAF1 is a subunit of multiple deubiquitinating enzyme complexes. J Biol Chem. 284(8):5343-51.

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