Data Sheet (Cat.No.TMPH-00568)

TargetMol

8-oxo-dGTP diphosphatase Protein, E. coli, Recombinant (His & SUMO)

General Information

Synonyms:	Mutator protein MutT;dGTP pyrophosphohydrolase;mutT;8-oxo-dGTPase;7,8-dihydro-8-oxoguanine-triphosphatase;8-oxo-dGTP diphosphatase
Protein Construction:	1-129 aa
Species:	E. coli
Expression Host:	E. coli
Accession:	P08337
Molecular Weight:	30.9 kDa (predicted)
AA Sequence:	MKKLQIAVGIIRNENNEIFITRRAADAHMANKLEFPGGKIEMGETPEQAVVRELQEEVGITPQHFSLFEKLEYEF PDRHITLWFWLVERWEGEPWGKEGQPGEWMSLVGLNADDFPPANEPVIAKLKRL

QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Tris-based buffer, 50% glycerol

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:

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

Specifically hydrolyzes both 8-oxo-deoxyguanosine triphosphate (8-oxo-dGTP) and 8-oxo-guanosine triphosphate (8-oxo-GTP) to the related monophosphates, thereby cleaning up the nucleotide pools and preventing misincorporation of 8-oxoGua into DNA and RNA. It prevents replicational errors by removing an oxidatively damaged form of guanine (8-oxo-dGTP) from DNA and the nucleotide pool. 8-oxo-dGTP can be inserted opposite dA and dC residues of template DNA with almost equal efficiency thus leading to A.T to G.C

transversions. MutT may also ensure transcriptional fidelity, removing 8-oxo-GTP from the ribonucleotide triphosphate pool. However, due to the lower efficiency of RNA polymerase 8-oxo-GTP incorporation, MutT is probably not a major contributor to transcriptional fidelity. It also hydrolyzes 8-oxo-dGDP and 8-oxo-GDP to their monophosphate form. In vitro, can also use dGTP, dGDP and other various nucleoside di- and triphosphates, with much lower efficiency. Works cooperatively with MutM and MutY to prevent accumulation in the DNA of oxidized guanine residues.

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