

BAR Protein, *S. hygroscopicus*, Recombinant

General Information

Synonyms:	bar;PPT N-acetyltransferase;Phosphinothricin-resistance protein;Phosphinothricin N-acetyltransferase
Protein Construction:	Met1-Ile183
Species:	<i>Streptomyces hygroscopicus</i>
Expression Host:	<i>E. coli</i>
Accession:	P16426
Molecular Weight:	18-20 KDa (reducing condition)
AA Sequence:	Met1-Ile183

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:	Greater than 95% as determined by reducing SDS-PAGE. (QC verified)
Endotoxin:	< 0.1 ng/μg (1 EU/μg) as determined by LAL test.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 12.5 mM Tris-HCl, 50 mM NaCl, 5% Trehalose, 5% Mannitol, 0.01% Tween 80, 2 mM DTT, 1 mM EDTA, pH8.5.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

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

Phosphinothricin N-acetyltransferase (PAT) is an enzyme that acetylates the free NH₂ group of L-phosphinothricin (L-PPT) in the presence of acetyl-CoA as a co-substrate. It is highly specific for L-PPT and does not acetylate other L-amino acids or structurally similar molecules. L-PPT is a glutamate analog that can inhibit glutamine synthetase activity in plants, resulting in the accumulation of ammonia to toxic levels and impairment of photosynthesis. The

introduction of a PAT gene into a plant genome can confer resistance to glufosinate herbicide during post-emergent applications.

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