

## BIN1 Protein, Human, Recombinant (His)

### General Information

Synonyms:	AMPHL;bridging integrator 1;AMPH2;SH3P9
Protein Construction:	A DNA sequence encoding the human BIN1 isoform BIN1-13 (O00499-10) (Met 1-Pro 424) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	O00499-10
Molecular Weight:	49.3 kDa (predicted); 52 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:	> 85 % 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 20 mM Tris, 10% glycerol, 1 mM DDT, 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

Amphiphysin 2, also named bridging integrator-1 (BIN1) or SH3P9, Amphiphysin2/BIN1 is a crescent-shaped N-BAR protein playing a key role in forming deeply invaginated tubes in muscle T-tubules, has been recently implicated in rare and common diseases affecting different tissues and physiological functions. BIN1 downregulation is linked to cancer progression and also correlates with ventricular cardiomyopathy and arrhythmia preceding heart failure. Increased BIN1 expression is linked to increased susceptibility for late-onset

Alzheimer's disease. In addition, altered splicing may account for the muscle component of myotonic dystrophies, while recessive germinal mutations cause centronuclear myopathy. Bridging integrator 1 (BIN1) as a late-onset Alzheimer's disease (AD) susceptibility gene. There are at least 15 different known isoforms of BIN1, with many being expressed in the brain including the longest isoform (iso1), which is brain-specific and localizes to axon initial segments and nodes of Ranvier. The bridging integrator 1 (BIN1) tumor suppressor encodes multiple alternatively spliced isoforms implicated in DNA repair, cell-cycle control, apoptosis and membrane dynamics.

### Reference

Eisenman RN. (2001) Deconstructing Myc. *Genes & Dev.* 15: 2023-30.

Bouchard C, et al. (1998) Control of cell proliferation by Myc. *Trends in Cell Biology.* 8(5): 202-6.

Sakamuro D, et al. (1996) BIN1 is a novel MYC-interacting protein with features of a tumour suppressor. *Nature Genetics.* 14: 69-77.

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