



Product Information

BiP

mouse, recombinant, histidine-tagged

expressed in *E. coli*

Product Code **B 8059**

Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonyms: Grp78; glucose-regulated protein, 78 kDa; Immunoglobulin Heavy Chain Binding Protein; HSPA5; Heat-Shock 70 kDa protein 5

Product Description

BiP is a member of the HSP70 heat shock protein family. This family of proteins is highly conserved. The HSP70 proteins share highly conserved structural domains: the 44 kDa N-terminal domain that has the catalytic ATPase activity and the C-terminal domain that contains a 20 kDa peptide-binding region that is followed by a helical, more variable 10 kDa tail that has not yet been fully characterized, but does contain a regulatory motif.

The HSP70 proteins are ubiquitous molecular chaperones that are found in all organisms and tissue types. Like other members of the HSP70 family, BiP is a peptide-binding ATPase that is able to differentiate native proteins from unfolded polypeptides. BiP does not bind to fully folded and assembled proteins, except in the presence of other co-chaperones.

BiP is involved in a number of key mechanisms and pathways including polypeptide translocation across the endoplasmic reticulum, folding, assembly, transport of secreted or membrane proteins, and the regulation of calcium homeostasis. Although BiP is relatively abundant, marked increases in BiP occur where there is an accumulation of unfolded polypeptides. For this reason, BiP has been identified as a marker for various disease states that are associated with secretory and transmembrane protein misfolding.

Recombinant, mouse BiP is expressed in *E. coli* with a multiple histidine tag and has a molecular weight of approximately 80 kDa.

The product is supplied in a solution of 20 mM HEPES, pH 7.4, 5 mM MgCl_2 , 75 mM KCl, and 5% glycerol.

Storage/Stability

The product ships on dry ice and storage at $-20\text{ }^{\circ}\text{C}$ is recommended. The product as supplied is stable for at least 1 year. After the initial thaw, remaining product may be aliquoted and stored at $-20\text{ }^{\circ}\text{C}$. Avoid repeated freeze/thaw cycles.

References

1. Chevalier, M., et al., Interaction of Murine BiP/GRP78 with the DnaJ Homologue MTJ1. *J. Biol. Chem.*, **275**, 19620-19627 (2000).
2. Chevalier, M., et al., Substrate Binding Induces Depolymerization of the C-terminal Peptide Binding Domain of Murine GRP78/BiP. *J. Biol. Chem.*, **273**, 26827-26835 (1998).
3. Gething, M., Role and regulation of the ER chaperone BiP. *Seminars in Cell and Developmental Biology*, **10**, 465-472 (1999).
4. Chevalier, M., et al., Purification and Properties of BiP. *Methods Enzymol.*, **290**, 384-409 (1998).

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