

## Product Information

### **Bcl-2 Protein** human, recombinant expressed in *E. coli*

Product Number **B 1182**  
Storage Temperature  $-70^{\circ}\text{C}$

Synonyms: Bcl-2 Protein - Maltose Binding Protein (MBP) fusion protein, C-terminal truncated; MBP-Bcl-2  $\Delta\text{C21}$ .

#### **Product Description**

This product is a 68 kDa fusion protein composed of a MBP moiety followed by a histidine tag and the Bcl-2 Protein lacking the 21 amino acid residues at the C-terminus. The human Bcl-2 Protein fusion protein is expressed in *E. coli*. The native Bcl-2 Protein has a molecular weight of approximately 26 kDa.

Apoptosis is an active process of cell death that controls cell numbers in a variety of tissues during embryonic development and throughout adult life. The prototypic regulator of mammalian cell death is the protooncogene *bcl-2*. In both normal and neoplastic tissues and in experimental situations, expression or overexpression of the *bcl-2* gene appears to protect cells from death, by preventing or delaying apoptosis.<sup>1</sup> Other genes with significant homology to *bcl-2* also seem to be important in controlling cell death.

The Bcl-2 family of proteins acts either to inhibit or to promote cell death. Apoptosis suppressor family members include Bcl-2, Bcl-x<sub>L</sub>, Mcl-1, A1 Bcl-w, and Ced-9, while pro-apoptotic members include Bax, Bak, Bcl-x<sub>S</sub>, Bid, Bad, Bik, Bim, and others.

The Bcl-2 proteins share Bcl-2 homology domains 1, 2, 3, and 4 (BH1, BH2, BH3, and BH4). The pro-apoptotic subgroup is composed of proteins containing only the BH3 domain. Members of the Bcl-2 family of proteins interact with each other via these BH domains.

Bcl-2 is located in the outer mitochondrial membrane, endoplasmic reticulum, or nuclear membrane, while the pro-apoptotic members are localized primarily in the cytosol. Bcl-2 and Bcl-x<sub>L</sub> each contain a stretch of ~20 hydrophobic amino acids at their C-termini.

Based on hydropathy plot analysis, these tails are presumed to function in anchoring these proteins into organelle membranes.<sup>2</sup>

Bcl-2 has the ability to homodimerize or to heterodimerize with death promoting Bcl-2 family members. The relative amount of heterodimers may regulate cell death.<sup>3,4,5</sup> Bcl-2 apoptosis suppressor activity may be dependent on its phosphorylation state and could be related to the prevention of pore formation in the mitochondrial membrane.

The product is supplied as a solution in 20 mM Tris, pH 7.4, 250 mM NaCl, 1 mM EDTA, 1 mM DTT, and 10% glycerol.

Purity: minimum 80% (SDS-PAGE)

#### **Precautions and Disclaimer**

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### **Storage/Stability**

The product ships on dry ice and storage at  $-70^{\circ}\text{C}$  is recommended.

## References

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2. Wolter, K. G. et al., J. Cell Biol., **139**, 1281 (1997).
3. Hsu, Y-T., and Youle, R. J., J. Biol. Chem., **272**, 13829 (1997).
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5. Oltvai, Z. N. et al., Cell, **74**, 609 (1993).
6. Gross, A. et al., Genes and Develop., **13**, 1899 (1999).
7. Reed, J. C., Oncogene, **17**, 3225 (1998).
8. Huang, Z., Oncogene, **19**, 6627 (2000).
9. Blagosklonny, M. V., Leukemia, **15**, 869 (2001).

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