

PRODUCT INFORMATION



Bcl-2 (human, recombinant)

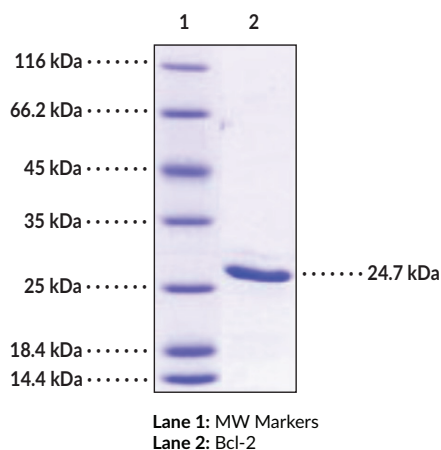
Item No. 33984

Overview and Properties

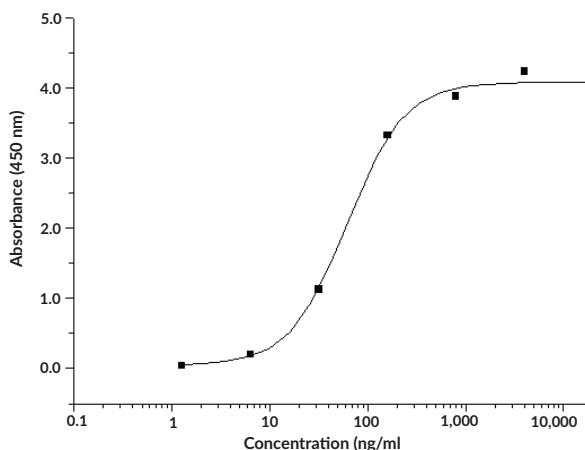
Synonym: BCL2
Source: Active recombinant human C-terminal His-tagged Bcl-2 expressed in *E. coli*
Amino Acids: 1-211
Uniprot No.: P10415
Molecular Weight: 24.7 kDa
Storage: 80°C (as supplied)
Stability: ≥1 year
Purity: ≥90% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile 50 mM Tris, 20% glycerol, 100 mM Arg, pH 8.5
Bioactivity: See figures for details.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



SDS-PAGE Analysis of Bcl-2. This protein has a calculated molecular weight of 24.7 kDa.



Binding of biotinylated BCL2L1 to immobilized Bcl-2. Immobilized human Bcl-2-His at 10 µg/ml (100 µl/well) can bind biotinylated mouse BCL2L1-His with an EC₅₀ value of 0.07-0.15 µg/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Bcl-2 is an anti-apoptotic protein and the founding member of the Bcl-2 family of proteins.^{1,2} Bcl-2 is composed of a C-terminal helix that acts as a membrane anchor and four highly conserved Bcl-2 homology (BH) domains.¹ The BH1, BH2, and BH3 domains form a hydrophobic cleft that mediates protein-protein interactions with the pro-apoptotic proteins Bax and Bak, resulting in their inhibition, whereas the BH4 domain regulates intracellular calcium levels by interacting with the inositol-1,4,5-triphosphate receptor (IP₃R) and ryanodine receptors (RyRs).^{1,3,4} Bcl-2 is highly expressed during embryogenesis and neuron and lymphocyte development and is primarily localized to the mitochondrial outer membrane.⁵ It inhibits the intrinsic apoptotic pathway by inhibiting Bax- or Bak-induced pore formation in the outer mitochondrial membrane, maintaining the mitochondrial membrane potential, and preventing the release of cytochrome c into the cytosol and the induction of apoptosis.^{2,3} Bcl-2 has oncogenic function, promoting tumor progression and angiogenesis, as well as metastasis.⁴ The *Bcl2* t(14;18)(q32;q21) translocation results in Bcl-2 overexpression and is a hallmark of follicular lymphoma.⁴ Bcl-2 is also overexpressed in several other cancers, including chronic lymphocytic leukemia (CLL), diffuse large B cell lymphoma (DLBCL), and prostate cancer.³ Cayman's Bcl-2 (human, recombinant) protein can be used for binding assays. This protein consists of 221 amino acids and has a calculated molecular weight of 24.7 kDa.

References

1. Tsujimoto, Y. and Shimizu, S. Bcl-2 family: Life-or-death switch. *FEBS Letters* **466**(1), 6-10 (2000).
2. Kirkin, V., Joos, S., and Zörnig, M. The role of Bcl-2 family members in tumorigenesis. *Biochim. Biophys. Acta* **1644**(2-3), 229-249 (2004).
3. Akl, H., Vervloessem, T., Kiviluoto, S., *et al.* A dual role for the anti-apoptotic Bcl-2 protein in cancer: Mitochondria versus endoplasmic reticulum. *Biochim. Biophys. Acta* **1843**(10), 2240-2252 (2014).
4. Biagi, J.J. and Seymour, J.F. Insights into the molecular pathogenesis of follicular lymphoma arising from analysis of geographic variation. *Blood* **99**(12), 4265-4275 (2002).
4. Gabellini, C., Trisciuoglio, D., and Del Bufalo, D. Non-canonical roles of Bcl-2 and Bcl-xL proteins: Relevance of BH4 domain. *Carcinogenesis* **38**(6), 579-587 (2017).
5. Opferman, J.T. and Kothari, A. Anti-apoptotic BCL-2 family members in development. *Cell Death Differ.* **25**(1), 37-45 (2018).

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