# SANTA CRUZ BIOTECHNOLOGY, INC.

# p-Bcl-2 (Thr 56): sc-16321



The Power to Question

## BACKGROUND

Apoptosis defines a set of cascades which, when initiated, programs the cell to undergo lethal changes such as membrane blebbing, mitochondrial break down and DNA fragmentation. Bcl-2 is one among many key regulators of apoptosis which are essential for proper development, tissue homeostasis and protection against foreign pathogens. Human Bcl-2 is a 26 kDa, membrane-associated, anti-apoptotic oncoprotein that can promote cell survival through protein-protein interactions with other Bcl-2 related family members, such as the death suppressors Bcl-x<sub>L</sub>, Mcl-1, Bcl-w and A1, or the death agonists Bax, Bak, Bik, Bad and BID. The anti-apoptotic function of Bcl-2 can also be regulated through proteolytic processing and phosphorylation. Bcl-2 may promote cell survival by interfering with the activation of the cytochrome c/Apaf-1 pathway through stabilization of the mitochondrial membrane. Mutations in the Bcl-2 gene can contribute to cancers where normal physiological cell death mechanisms are compromised by deregulation of the anti-apoptotic influence of Bcl-2.

## REFERENCES

- Kerr, J.F., et al. 1972. Apoptosis: a basic biological phenomenon with wide-ranging implications in tissue kinetics. Br. J. Cancer 26: 239-257.
- 2. Hockenbery, D., et al. 1990. Bcl-2 is an inner mitochondrial membrane protein that blocks programmed cell death. Nature 348: 334-336.
- Alnemri, E.S., et al. 1992. Overexpressed full-length human Bcl-2 extends the survival of baculovirus-infected Sf9 insect cells. Proc. Natl. Acad. Sci. USA 89: 7295-7299.
- 4. Reed, J.C. 1994. Bcl-2 and the regulation of programmed cell death. J. Cell Biol. 124: 1-6.
- 5. Yang, J., et al. 1997. Prevention of apoptosis by Bcl-2: release of cytochrome c from mitochondria blocked. Science 275: 1129-1132.
- Adams, J.M., et al. 1998. The Bcl-2 protein family: arbiters of cell survival. Science 281: 1322-1326.

## CHROMOSOMAL LOCATION

Genetic locus: BCL2 (human) mapping to 18q21.33.

## SOURCE

p-Bcl-2 (Thr 56) is available as either goat (sc-16321) or rabbit (sc-16321-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Thr 56 of Bcl-2 of human origin.

## PRODUCT

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16321 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **STORAGE**

Store at 4° C, \*\*D0 NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

p-Bcl-2 (Thr 56) is recommended for detection of Thr 56 phosphorylated Bcl-2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for BcI-2 siRNA (h): sc-29214, BcI-2 shRNA Plasmid (h): sc-29214-SH and BcI-2 shRNA (h) Lentiviral Particles: sc-29214-V.

Molecular Weight of p-Bcl-2: 26 kDa.

Positive Controls: Paclitaxel treated Jurkat whole cell lysate.

#### DATA



Western blot analysis of BcI-2 phosphorylation in untreated (**A**,**D**), human recombinant p38 $\alpha$  treated (**B**,**E**) and human recombinant p38 $\alpha$  and lambda protein phosphatase treated (**C**,**F**) human recombinant BcI-2 fusion proteins. Antibodies tested include p-BcI-2 (Thr 56)-R: sc-16321-R (**A**,**B**,**C**) and BcI-2 (C-2): sc-7382 (**D**,**E**,**F**).

#### SELECT PRODUCT CITATIONS

- Dremina, E.S., et al. 2004. Anti-apoptotic protein Bcl-2 interacts with and destabilizes the sarcoplasmic/endoplasmic reticulum Ca<sup>2+</sup>-ATPase (SERCA). Biochem. J. 383: 361-370.
- Xiao, D., et al. 2004. Diallyl trisulfide-induced apoptosis in human prostate cancer cells involves c-Jun N-terminal kinase and extracellular-signal regulated kinase-mediated phosphorylation of Bcl-2. Oncogene 23: 5594-5606.

## **RESEARCH USE**

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.