

Product Information

ANTI- BAK

Developed in Rabbit, IgG Fraction of Antiserum

Product Number **B 5897**

Product Description

Anti-Bak is developed in rabbit using a synthetic peptide corresponding to the N-terminal of human Bak (amino acids 23-38 with C-terminally added lysine), conjugated to KLH as immunogen. This sequence is highly conserved in mouse Bak (single amino acid substitution). Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Bak recognizes human Bak (28 kDa). Applications include the detection and localization of Bak by immunoblotting and immunohistochemistry. Staining of Bak by immunoblotting is specifically inhibited with the Bak immunizing peptide (human Bak, amino acids 23-38 with C-terminally added lysine).

Bak (Bcl-2 homologous antagonist/killer, Bak1) belongs to the Bcl-2 family of proteins that are involved in regulating apoptosis.^{1,2} At least 15 Bcl-2 family members have been identified in mammalian cells. Pro-survival members of the Bcl-2 family, which include Bcl-x_L, Bcl-w, Mcl-1 and A1, can inhibit apoptosis in response to a wide variety of cytotoxic insults, whereas the pro-apoptotic family members (e.g. Bak, Bax, Bad, Bik and Bid) in general antagonize the function of the pro-survival family members. The *bak* gene (*bak-1*, mapped to chromosome 6) encodes a 233 amino acid protein with a predicted MW of 23.4 kDa, which migrates by SDS-PAGE as an approximately 28-30 kDa protein under denaturing conditions.³⁻⁵ Southern analysis has indicated the presence of two additional *bak* genes, *bak-2* which shares 97% homology with *bak-1* and maps to chromosome 20, and *bak-3*, a pseudogene, which maps to chromosome 11.⁴ The mouse homolog of *bak-1* maps to chromosome 17.⁶ Bak shows a 53% homology with Bcl-2 in the BH1 and BH2 domains, but only 28% overall homology with Bcl-2. Bak is expressed in a wide variety of cell types and tissues, with the highest levels observed in heart and skeletal muscle.^{3,4,7} Bak can form heterodimers

with Bcl-2, Bcl-x_L and the adenovirus homolog E1B 19K protein.³ Bak can accelerate the rate of apoptosis when overexpressed in some cell lines, suggesting that it functions primarily as a promoter of apoptosis.³⁻⁵ Increased Bak expression in normal and neoplastic intestinal epithelial cells results in apoptosis.⁷⁻⁸ However, expression of Bak in a human lymphoblastoid cell line provided protection from apoptosis induced by serum deprivation and the oxidant menadione, suggesting that the function of Bak may be context dependent.

Reagents

Anti-Bak is supplied as an IgG fraction of antiserum in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A minimum working dilution of 1:2,000 is determined by immunoblotting using a whole extract of the human epidermal carcinoma A431 cell line.

A minimum working dilution of 1:100 is determined by immunohistochemistry using formalin-fixed, paraffin-embedded sections of human colon adenocarcinoma.

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

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