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ProductInformation

Bid, Caspase-8 Cleaved
Human, Recombinant

Product Number **C4608**
Storage Temperature -20 °C

Product Description

Human Bid (amino acids 1-195, accession number NM_001196) is expressed in *E. coli* and purified from the soluble fraction of disrupted cells. Purified Bid was cleaved by caspase-8 more than 90% as assayed by SDS-PAGE. Capase-8 was removed after cleavage by ion-exchange chromatography. Capase-8 activity could not be detected in the final product. Cleavage of purified, recombinant human Bid with capase-8 generates an N-terminal fragment of amino acids 1-60 and a C-terminal fragment of amino acids 61-195. On SDS-reducing and non-reducing gels these fragments migrate as 7 and 15 kDa polypeptides. In some preparations the N-terminal fragment migrates as a 6 and 7-kDa doublet suggesting that this fragment was cleaved by caspase-8 at an internal aspartate.

Bid is a member of the Bcl-2 family that regulates outer mitochondrial membrane permeability.[1] Bid is a pro-apoptotic that can cause cytochrome c to be released from the mitochondrial intermembrane space into the cytosol. In healthy cells Bid is cytosolic. In response to Fas ligand or TNF Bid is cleaved by capase-8 and then relocates to the mitochondria outer membrane.[2,3] Cleavage of Bid by caspase-8 generates a new N-terminal glycine, which apparently is myristoylated to target Bid to the mitochondria.[4] Bid may then interact with another pro-apoptotic Bcl-2 family member, Bak.[5] The interaction of Bid with Bak causes altered mitochondrial membrane permeability. Binding to the anti-apoptotic member Bcl-X_L neutralizes the activity of Bid.

The typical EC_{50} for cytochrome c releasing activity is between 10 and 50 nM. The EC_{50} for the desired application should be determined.

Purity: >95% (SDS-PAGE)

Supplied frozen as a 0.2 µm filtered solution in 25 mM HEPES, pH 7.5, containing 0.1 M KCl.

Precautions and Disclaimer

This product is for laboratory use only. Please consult the Material Data Safety Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Stable for at least one year when store at –20 °C. After thawing, sterile solutions may be stored at 4 °C for one week or aliquoted under sterile conditions and stored at –20 °C. Avoid repeated freeze-thaw cycles.

References

1. Gross, A. *et al*., BCL-2 family members and the mitochondria in apoptosis. Genes and Develop., **13**, 1899-1911 (1999).
2. Luo, X. *et al*., Bid, a Bcl2 interacting protein, mediates cytochrome c release from mitochondria in response to activation of cell surface death receptors, Cell, **94**, 481-490 (1998).
3. Li, H. *et al*., Cleavage of BID by caspase 8 mediates the mitochondrial damage in the Fas pathway of apoptosis. Cell, **94**, 491-501 (1998).
4. Zha, J. *et al*., Posttranslational N-myristoylation of BID as a molecular switch for targeting mitochondria and apoptosis. Science, **290**, 1761-1765 (2000).
5. Wei, M.C. *et al*., tBID, a membrane-targeted death ligand, oligomerizes BAK to release cytochrome c. Genes Dev., **14**, 2060-2071 (2000).

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