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ProductInformation

ANTI-APOPTOSIS-INDUCING FACTOR (AIF)
Developed in Rabbit, IgG Fraction of Antiserum

Product Number **A 7549**

Product Description

Anti-Apoptosis-Inducing Factor (AIF) is developed in rabbit using a synthetic peptide corresponding to the C-terminus of human AIF (amino acids 593-613), conjugated to KLH as immunogen. This sequence is identical in mouse AIF. 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-AIF recognizes human and mouse AIF (57 kDa). Applications include the detection and localization of AIF by immunoblotting. Staining of AIF in immunoblotting is specifically inhibited with the AIF immunizing peptide (human, amino acids 593-613).

Apoptosis-Inducing Factor (AIF), is a 57 kDa mitochondrial flavoprotein, that is sufficient to induce apoptosis of isolated nuclei.[1-3] Mitochondria play a key role in the regulation of apoptosis, or programmed cell death (PCD). The mitochondrial inner membrane space normally contains a number of cell death-promoting factors, including cytochrome c and apoptosis-inducing factor (AIF).[4-7] Opening of the mitochondrion inner channel, the mitochondrial permeability transition pore (mPTP), upon induction of apoptosis, causes collapse of the mitochondrial transmembrane potential ??. This results in swelling of the mitochondria inner membrane and release of the death-promoting factors in the cytosol. Cytochrome c and AIF released from the mitochondria directly activate caspases and AIF translocates to the nucleus, inducing chromatin destruction.[1,3,6] AIF shares considerable homology with the bacterial oxyreductases. AIF contains two mitochondrial localization sequences and two putative nuclear localization sequences.[1,3] Recombinant AIF causes chromatin condensation and large-scale DNA fragmentation in isolated HeLa cell nuclei. It induces purified mitochondria to release cytochrome c and caspase-9. Microinjection of AIF into the cytoplasm of intact cells induces chromatin condensation, dissipation of the mitochondrial transmembrane potential and exposure of phosphatidylserine in the plasma membrane.[1]

Overexpression of Bcl-2, which controls the opening of mPTPs, prevents the release of AIF from the mitochondrion, but does not affect its apoptogenic activity.[1] This suggests that AIF is the principal mitochondrial factor causing nuclear apoptosis.

Reagents

Anti-AIF 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 hazardous 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 1:1,000 is determined by immunoblotting using a whole extract of mitochondria from the human epitheloid carcinoma HeLa cell line.

A minimum working dilution of 1:1,000 is determined by immunoblotting using a mouse brain extract.

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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