

Product Information

Anti-DFF45, N-Terminal

produced in rabbit, affinity isolated antibody

Catalog Number **I7528**

Synonym: Anti-ICAD

Product Description

Anti-DFF45 is produced in rabbit using a synthetic peptide corresponding to amino acids 2-21 at the N-terminus of mouse ICAD (inhibitor of caspase-activated DNase)¹ as immunogen.

Anti-DFF45 recognizes mouse ICAD by immunoblotting (45 kDa).

DFF45 and DFF40 (also termed ICAD and CAD) are two subunits that make up the heterodimeric protein caspase-activated DNase or DNA Fragmentation Factor (DFF) that triggers DNA fragmentation during apoptosis.² DFF exists as an inactive cytoplasmic protein until activated by apoptotic signals. DFF45 functions as both a chaperone, mediating the correct folding of DFF40, and an inhibitor of DFF40.³ In response to apoptotic signals, DFF45 is cleaved by caspase-3 at two sites. This releases active nuclease, DFF40.^{1,4-7} DFF40 seems to oligomerize, forming a large, functional complex which breaks down DNA by introducing double-strand breaks. Furthermore, DFF40 appears to interact directly with histone H1 that may stimulate its activity.⁸

Reagents

Supplied at 0.5 mg/ml in phosphate buffered saline, containing 0.02% sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Antibody can be stored at 2-8 °C for three months and at -20 °C for one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Product Profile

Immunoblotting: recommended working concentration is 1 µg/ml using mouse lung cell lysate. A 45 kDa band should be detected in non-apoptotic cells.

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

References

1. Enari M., et al., A caspase-activated Dnase that degrades DNA during apoptosis, and its inhibitor ICAD. *Nature*, **391**, 43-50 (1998).
2. Liu X., et al., DFF, a heterodimeric protein that functions downstream of caspase-3 to trigger DNA fragmentation during apoptosis. *Cell*, **89**, 175-184 (1997).
3. McCarty, J.S., et al., Study of DFF45 in its role of chaperone and inhibitor: two independent inhibitory domain of DFF40 nuclease activity. *Biochem. Biophys. Res. Commun.*, **264**, 176-180 (1999).
4. Sakahira H, et al., Cleavage of CAD inhibitor in CAD activation and DNA degradation during apoptosis. *Nature*, **391**, 96-99 (1998).
5. Tang D., and Kidd, V.J., Cleavage of DFF-45/ICAD by multiple caspases is essential for its function during apoptosis. *J. Biol. Chem.*, **273**, 28549-28552 (1998).
6. Wolf, B.B., et al., Caspase-3 is the primary activator of apoptotic DNA fragmentation via DNA fragmentation factor-45/inhibitor of caspase-activated Dnase inactivation. *J. Biol. Chem.*, **274**, 30651-30656 (1999).
7. Wohrl, W., and Hacker, G., Extent and limitation of the control of nuclear apoptosis by DNA-fragmenting factor. *Biochem. Biophys. Res. Commun.*, **254**, 552-558 (1999).
8. Lui Z, et al., Activation of the apoptotic endonuclease DFF40 (caspase-activated DNase or nuclease). *J. Biol. Chem.*, **274**, 13836-13840 (1999).

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