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ProductInformation

ANTI-CASPASE-4
Developed in Rabbit
Affinity Isolated Antibody

Product Number **C 4481**

Product Description

Anti-Caspase-4 is developed in rabbits using a synthetic peptide corresponding to amino acid residues 81-98 of human Caspase-4 (α isoform) with N-terminal added lysine, conjugated to KLH with glutaraldehyde. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Caspase-4 specifically recognizes human procaspase-4 by immunoblotting and immunoprecipitation (43-47 kDa). Staining of procaspase-4 by immunoblotting is inhibited by the immunizing peptide. In some preparations, an additional band can be detected by immunoprecipitation.

Apoptosis, an evolutionary conserved form of cell suicide, requires specialized machinery, a key component of which is a family of proteases called Caspases (**C**ysteine-requiring **Asp**artate prote**ases**).[1] They are synthesized as proenzymes in normal cells and are activated when the cells receive appropriate stimuli. Caspases can be grouped into three main subfamilies based on their amino acid sequences. The caspase 1 (ICE-type caspases) subfamily, the initiators, and the effector subfamily. The caspase 1 subfamily includes caspases 1, 4, 5, 11, and 13. Members of this subfamily along with caspase 12, have a greater role in cytokine maturation and inflammation than in apoptosis. They may also be indirectly involved in apoptosis as activators of other caspases (upstream activity).

Caspase-4 (also known as ICE-2, Ich-2, ICErel-II, and TX) is a 377 amino acids protein "upstream" caspase having a long N-terminal prodomain. It undergoes cleavage upon activation, leading to p20 and p10 subunits which have 67% homology to mature caspase-1 over the equivalent coding sequence.[2-8] Caspase-4 is capable of cleaving itself and the p30 caspase-1 precursor, and of inducing apoptosis in transfected insect or COS cells. In high concentrations, it can also cleave the nuclear DNA enzyme PARP but the biological relevance of this cleavage is unclear.[8]

Caspase-4 mRNA is found in most tissues examined with the exception of the brain.[3, 6] Highest expression is found in spleen and lung, with moderate expression in heart and liver. Low expression is observed with skeletal muscle, kidney, and testis.

Reagent

Anti-Caspase-4 is supplied in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data 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 prolonged storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is also 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 1:250 is determined by immunoblotting using a whole extract of human ECV304 endothelioid cells, and chemiluminescent immunoblotting detection reagent.

5-10 µg of the antibody immunoprecipitates caspase-4 from a 250-300 µg RIPA lysate of human ECV304 endothelioid cells.

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

References

1. Thornberry, N.A., and Lazebnik, Y., Science, **281**, 1312-1316 (1998).
2. Wang, L., et al., Cell, **78**, 739-750 (1995).
3. Kamens, J., et al., J. Biol. Chem., **270**, 15250-15256 (1995).
4. Fernandes-Alnemri, T., et al., Cancer Res., **55**, 2737-2742 (1997).
5. Cohen, G.M., Biochem., J., **326**, 1-16 (1997).
6. Munday, N.A., et al., J. Biol. Chem., **270**, 15870-15876 (1995).
7. Faucheau, C., et al., EMBO J., **14**, 1914-1922 (1995).
8. Gu, Y., et al., J. Biol.Chem., **270,** 18715-18718 (1995).

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