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ProductInformation

Monoclonal Anti-Caspase 10
Clone 25C2
Purified Rat Immunoglobulin

Product Number **C 1229**

Product Description

Monoclonal Anti-Caspase 10 (rat IgG2a isotype) is derived from the 25C2 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a rat immunized with a recombinant p17 subunit of human caspase 10. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-Caspase 10 reacts specifically with human caspase 10. The antibody may be used for immunoblotting to detect the full length caspase 10 (59 kDa), the p17 subunit of caspase 10, and possibly an additional band of approximately 35 kDa.

Apoptosis, an evolutionary conserved form of cell suicide, requires specialized machinery. The central component of this machinery is a proteolytic system involving a family of proteases called caspases. These enzymes participate in a cascade that is triggered in response to proapoptotic signals and culminates in cleavage of a set of proteins, resulting in disassembly of the cell.

Caspases (**C**ysteine-requiring **Asp**artate prote**ase)** are a family of proteases that share similarities in amino acid sequences, structure, and substrate specificity.[1-4] Caspases can be grouped into three subfamilies based on their amino acid sequence homology. The caspase 1 (ICE-type caspases) subfamily contains caspases 1, 4, 5, 11, and 13. This subfamily along with caspase 12, has a role in inflammation as well as in apoptosis; these proteases may also be indirectly involved in apoptosis as activators of other caspases (upstream activity). Caspase-8 and -10 are involved in death receptor mediated apoptosis. The caspase 2 subfamily contains caspases 2 and 9, while the caspase 3 subfamily contains caspases 3, 6 and 7, and are effectors of apoptosis (downstream activity). Caspases are normally present in the cell as inactive procaspases. The proenzymes (30-60 kDa) contain three domains: an NH_2-terminal prodomain, a large subunit (17-22 kDa), and a small subunit (10-12 kDa). Proteolytic cleavage at Asp residues removes the regulatory N-terminal prodomain and cleaves the proenzyme into the large and small subunits. The subunits self-associate into heterodimers that in turn form the active caspase a tetramer consisting of two large and two small subunits. The active caspases continue the cascade by autocleaving, cleaving other procaspases, or cleaving other key proteins such as (but not limited to) poly(ADP-ribose) polymerase (PARP), DNA-dependent protein kinase (DNA-PK), lamins, nuclear mitotic apparatus protein (NuMA), and sterol regulatory element binding proteins (SREBPs).

The gene for Caspase 10 (also known as Mch4, FLICE2 and ICE-LAP4) encodes a “long” prodomain protein product of 59 kDa (reported also as 55 kDa). Four isoforms of caspase 10 (caspase 10a, 10b, 10c and 10d) have the same prodomain but different mature large and small subdomain, have been described.[5-7] Caspase 10 undergoes a cleavage upon activation, leading to p17 and p12 subunits.

Caspase 10 is constitutively expressed in many fetal and adult tissues, with the lowest expression observed in brain, kidney, prostate, testis, and colon.[2] Caspase 10 contains two death effector domains (DEDs) involved in the linking to the death effector domain of the adapter protein FADD and recruiting the complex to TNFR1 and Fas. Caspase 10 is one of the earliest caspases involved in the apoptosis induced cascade and may be responsible for the activation of most of the other caspases including caspase 3, 4, 6, 7 ,8 and 9.[7,8] This is followed by cleavage of numerous key proteins, including the nuclear protein PARP.[5,6] Monoclonal antibodies reacting specifically with caspase 10 are useful tools for the study of the protease networks involved in development and regulation and governing the life and death of cells and tissues.

Reagent

Monoclonal Anti-Caspase 10 is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: Approx. 2 mg/ml.

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 °C to 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 working concentration of 5-10 µg/ml is determined by immunoblotting using a whole extract of cultured human acute T cell leukemia Jurkat cells.

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

References

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