

Product Information

ANTI-CALPAIN LP-85 (Lens-specific Calpain) (Domain IV) Large Subunit

Developed in Rabbit, Affinity Isolated Antibody

Product Number **C0478**

Product Description

Anti-Calpain LP-85 (Lens-specific Calpain) (Domain IV) Large Subunit is developed in rabbit using a synthetic peptide corresponding to a unique insert found in the ELF-hand (the calcium binding domain-IV in the large subunit) of rat LP-85 calpain (lens-specific calpain) as immunogen. The antibody is affinity purified using peptide agarose.

Anti-Calpain LP-85 (Lens-specific Calpain) (Domain IV) Large Subunit specifically binds to latent and active calpain-LP-85 and does not cross-react with other calpain family members (μ -calpain, m-calpain, calpain-94, ncl-2, ncl-3, etc). By immunoblotting against the reduced protein, the antibody reacts with bands at 85 kDa and 62 kDa and a series of further cleaved active forms. It also reacts with non-reduced calpain LP-85. Species reactivity includes rat and mouse. The antibody may be used for immunoprecipitation, immunohistochemistry and ELISA.

The calpains are calcium-activated non-lysosomal thiol-proteases. m-Calpain, also termed calpain-II, is an intracellular, Ca^{2+} -dependent cysteine protease. m-Calpain has a millimolar sensitivity (m-) as compared to the micromolar calcium sensitivity of μ -calpain (calpain-I). The calpains have papain-like activity, thus the -pain nomenclature. Both m- and μ -calpain are ubiquitously expressed and are countered by the endogenous calpain inhibitor calpastatin. Other calpain family members (calpain-94, ncl-2, ncl-3, etc) have more limited tissue distribution, and perhaps different functions. The calpain family members are heterodimers and consist of a common small subunit (regulatory) of 30 kDa, and a large variable subunit (catalytic) of 80 kDa. Domains in the large subunit include the N-terminal domain-I, the proteinase domain-II, domain-II and the EF-hand (Ca^{2+} -binding) domain-IV.¹ Calpains are present in all mammalian tissues and are involved in a variety of processes including cell proliferation,^{2,3} differentiation,⁴⁻⁶ vesicle secretion and others.^{7,8}

Calpain-LP-85, is a tissue specific calpain and is found in the lens. It is identical to calpain-LP-82, except for the insert that distinguishes LP-85.^{9,10} The latent large subunit of calpain-LP-85 is 85 kDa and a Nterminal truncation at activation yields an approximately 62 kDa form. Because of limited distribution and sequence differences, calpain LP-85 is thought to have different roles than other calpain family members.

Reagents

Anti-Calpain LP-85 (Lens-specific Calpain) (Domain IV) Large Subunit is supplied in 0.01 M phosphate buffered saline, pH 7.4, containing 50% glycerol and 15 mM sodium azide as preservative. Protein concentration is approximately 1 mg/ml.

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 hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, the solution may be stored at 0° to -20°C. The antibody is supplied with 50% glycerol to prevent freezing. If slight turbidity occurs upon pro-longed storage, clarify the solution by centrifugation before use.

Product Profile

A working dilution of 1:1,000 is determined by immunoblotting an alkaline phosphatase conjugated secondary antibody using BCIP/NBT as substrate. Higher antibody concentrations may be necessary for non-human samples.

Note: Most cell types produce m-calpain. Since it is a cellular protein, cell lysates work well for immunoblotting.

In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimum working dilutions by titration assay.

References

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