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Product Information

Anti-STIM2
produced in rabbit, affinity isolated antibody

Catalog Number **S8572**

Product Description

Anti-STIM2 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 812-833 of human STIM2 (GeneID: 57620), conjugated to KLH. The corresponding sequence is identical in rat and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-STIM2 recognizes human, rat and mouse STIM2 by immunoblotting (~100 kDa). Detection of the STIM2 band is specifically inhibited by the immunizing peptide.

STIM (stromal interaction molecule) proteins are conserved single-pass transmembrane proteins required for the regulation of store-operated Ca^{2+} influx.[1,2,3] Store-operated calcium entry is mediated by Ca^{2+} release-activated Ca^{2+} (CRAC) channels, following Ca^{2+} depletion from the endoplasmic reticulum (ER) stores. This process is crucial for gene transcription, proliferation and cytokine release.[4,5]

The three STIM proteins, STIM1, STIM2 and D-Stim, are ubiquitously expressed proteins composed of a single SAM (sterile α-motif) domain and an unpaired EF hand within the highly conserved extracellular region, and coiled-coil domains that are conserved in structure and position within the cytoplasmic region. Significant divergence between these proteins was found only at the extreme C-termini. STIM proteins are modified by phosphorylation and N-linked glycosylation.[1,3] STIM1 localizes predominantly in the membrane of the ER and appears to function as a sensor of ER Ca^{2+} levels. Upon Ca^{2+} store depletion, STIM1 undergoes rapid oligomerization and redistributes into discrete spots (punctae) that move towards and accumulate in the cell periphery, possibly to activate Orai1 that is located in the plasma membrane. Orai1, also called CRACM1, is an evolutionarily conserved plasma membrane protein essential for store-operated calcium entry in T cells and fibroblasts. There is strong evidence that Orai is a pore subunit of the CRAC channel. Orai1 co-localizes with STIM1 near the plasma membrane after store depletion.[6] STIM2 is an inhibitor of STIM1-mediated store-operated Ca^{2+} entry. STIM2 co-localizes with STIM1 in punctae upon store depletion, and co-precipitates with STIM1 from cell lysates, suggesting they may play a coordinated role in controlling Ca^{2+} entry.[2]

Reagent

Supplied as a solution in 0.01 M PBS, pH 7.4, containing 15 mM sodium azide as preservative.

Antibody concentration: ~1.0 mg/mL

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

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or 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

Immunoblotting: a working concentration of 0.5-1.0 μg/mL is recommended using whole extracts of human U87 cells and rat brain. A working concentration of 0.1-0.2 μg/mL is recommended using a whole extract of mouse brain.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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3. Williams, R.T., et al., *Biochem. J.*, **357**, 673-685 (2001).
4. Zhang, S.L., et al., *Nature*, **437**, 902-905 (2005).
5. Vig, M., et al., *Science*, **312**, 1220-1223 (2006).
6. Gwack, Y., et al., *J. Biol. Chem*., **282**, 16232-16243 (2007).

ST,DXP,PHC 03/08-1

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