SANTA CRUZ BIOTECHNOLOGY, INC.

CAX1 (aN-20): sc-27240

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In plants and fungi, vacuolar transporters help remove potentially toxic cations from the cytosol. Transporter-mediated Ca^{2+} efflux from the cytoplasm is an important component of plant signal transduction. The *Arabidopsis thaliana* cation exchangers, CAX1, CAX2 and CAX3, can transport Ca^{2+} into the vacuole. Precise regulation of calcium transporters is essential for modulating the Ca^{2+} signaling network that is involved in the growth and adaptation of all organisms. The *Arabidopsis* H^+/Ca^{2+} antiporter, CAX1, is a high capacity and low affinity Ca^{2+} transporter and several CAX1-like transporters are found in *Arabidopsis*.

REFERENCES

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2. Shigaki, T., et al. 2002. Analysis of the Ca^{2+} domain in the *Arabidopsis* H^+/Ca^{2+} antiporters CAX1 and CAX3. Plant Mol. Biol. 50: 475-483.
3. Pittman, J.K., et al. 2002. Mechanism of N-terminal autoinhibition in the *Arabidopsis* Ca^{2+}/H^+ antiporter CAX1. J. Biol. Chem. 277: 26452-26459.
4. Catala, R., et al. 2003. Mutations in the Ca^{2+}/H^+ transporter CAX1 increase CBF/DREB1 expression and the cold-acclimation response in *Arabidopsis*. Plant Cell. 15: 2940-2951.
5. Cheng, N.H., et al. 2003. The *Arabidopsis* cax1 mutant exhibits impaired ion homeostasis, development, and hormonal responses and reveals interplay among vacuolar transporters. Plant Cell. 15: 347-364.
6. Shigaki, T., et al. 2003. Manganese specificity determinants in the *Arabidopsis* metal/H^+ antiporter CAX2. J. Biol. Chem. 278: 6610-6617.
7. Cheng, N.H., et al. 2003. Cloning and characterization of CXIP1, a novel PICOT domain-containing *Arabidopsis* protein that associates with CAX1. J. Biol. Chem. 278: 6503-6509.
8. Cheng, N.H., et al. 2004. The protein kinase SOS2 activates the *Arabidopsis* H^+/Ca^{2+} antiporter CAX1 to integrate calcium transport and salt tolerance. J. Biol. Chem. 279: 2922-2926.
9. Cheng, N.H., et al. 2004. Characterization of CXIP4, a novel *Arabidopsis* protein that activates the H^+/Ca^{2+} antiporter, CAX1. FEBS Letts. 559: 99-106.
10. Kim, K.M., et al. 2005. Development of transgenic rice plants overexpressing the *Arabidopsis* H^+/Ca^{2+} antiporter CAX1 gene. Plant Cell. Rep. 23: 678-682.

SOURCE

CAX1 (aN-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CAX1 of *Arabidopsis thaliana* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27240 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CAX1 (aN-20) is recommended for detection of CAX1 of *Arabidopsis thaliana* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.