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ProductInformation

Anti-AtRAC8
produced in rabbit, affinity isolated antibody

Catalog Number **A9105**

Product Description

Anti-AtRAC8 is produced in rabbit using as immunogen, a synthetic peptide corresponding to amino acids 28-46 located in a region near the N-terminus of *Arabidopsis* AtRAC8, conjugated to KLH. This sequence is identical in AtRACs 7 and 10, is highly conserved (2 amino acid substitutions) in AtRACs 1-6, 11 and AtRAC9 (3 amino acid substitutions), and in RAC/Rop of many plant species. Anti-AtRAC8 is affinity-purified using the immunogenic peptide immobilized on agarose.

Anti-AtRAC8 detects AtRAC8 expressed in *E. coli*. by immunoblotting, 21 kDa. Staining of the AtRAC8 band is specifically inhibited by the immunizing peptide.

Rho GTPases belong to the Ras superfamily of small GTPases, which consists of the Rho, Rac, and Cdc42 subgroups. In animal cells, Rho GTPases differentially regulate the actin cytoskeleton, endocytosis, and several signaling cascades including mitogen-activated protein kinase (MAPK) and phosphoinositide (PI) pathways.[1, 2] Activation of Rho occurs via interaction with GDP/GTP exchange factors (GEFs) and GTPase activating proteins (GAPs), and is modulated by prenylation.[3] The C-terminal hypervariable domain contains the CAAX box prenylation motif, a polybasic Lys-rich domain, and may contain additional Cys residues required for palmitoylation.

Plants contain a unique Rho GTPase subfamily designated as RAC or Rop (Rho from plants).[4-6] The RAC/Rop subfamily is subdivided into two major subgroups called type-I and type-II. Type-I RACs are putatively prenylated, whereas type-II RACs are palmitoylated but not prenylated.[7] RAC/Rop proteins regulate a wide array of cellular processes. They induce reorganization of actin, and have been implicated in changes in polar growth patterns.[8, 9] In addition to changes in actin organization, RAC/Rop proteins induce Ca^{2+} influx at the tip in germinating pollen tubes and growing root hair cells.[10, 11] They also regulate various hormone-mediated plant signaling and developmental processes, the production of reactive oxygen species, and modulate the pathogen-induced hypersensitive response (HR).[11-13] In *Arabidopsis*, 11 different RAC/Rop GTPases (~21 kDa) have been identified.[5] AtRAC8/AtRop10 is a 21 kDa (208 amino acids) protein that belongs to the AtRAC type II subfamily, which includes AtRAC7 and AtRAC10. AtRAC8 is 95% identical to AtRAC10 but contains four additional amino acids downstream of an internal CAAX box. AtRAC7, AtRAC8, and AtRAC10 differ in their ability to become prenylated. However, the plasma membrane localization of all three proteins is prenylation independent; it requires palmitoylation and depends on a plant cell-specific mechanism. The function of the individual RACs is not well understood. AtRAC10 expression has been shown to disrupt actin cytoskeleton organization and membrane cycling.[14]

Reagent

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

Antibody concentration: ~2.5 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 dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5-1 µg/mL is recommended using recombinant His-AtRac8 expressed in *E. coli*.

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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