SANTA CRUZ BIOTECHNOLOGY, INC.

ACC Oxidase (aN-19): sc-12781

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The five integral families of plant hormones consists of auxins, cytokinins, giberellins (GAs), abscisic acid (ABA), and ethylene. Giberellins, which consist of over fifty family members, mediate shoot growth. In *Arabidopsis thaliana*, SPINDLY (SPY) negatively regulates GA signal transduction. ERA1 (enhanced response to absisic acid), which is identical to WIGGUM, controls floral and shoot apical meristem size and floral organ number in response to ABA. Ethylene is perceived by a family of five receptors, one of which is ETR1, whereas CTR1 is a negative regulator of the ethylene signal transduction pathway. Ethylene is also produced endogenously in *Arabidopsis thaliana* via a biosynthetic pathway, which is catalyzed by ACC synthase and ACC oxidase.

REFERENCES

1. Kieber, J.J., et al. 1993. CTR1, a negative regulator of the ethylene response pathway in *Arabidopsis*, encodes a member of the Raf family of protein kinases. Cell 72: 427-441.
2. Heidstra, R., et al. 1997. Ethylene provides positional information on cortical cell division but is not involved in Nod factor-induced root hair tip growth in Rhizobium-legume interaction. Development 124: 1781-1787.
3. Jacobsen, S.E., et al. 1998. SPINDLY's role in the gibberellin response pathway. Symp. Soc. Exp. Biol. 51: 73-78.
4. Arteca, J.M. and Arteca, R.N. 1999. A multi-responsive gene encoding 1-aminocyclopropane-1-carboxylate synthase (ACS6) in mature *Arabidopsis* leaves. Plant Mol. Biol. 39: 209-219.
5. Peng, J., et al. 1999. Extragenic suppressors of the *Arabidopsis* GAI mutation alter the dose-response relationship of diverse gibberellin responses. Plant Physiol. 119: 1199-1208.
6. Hall, A.E., et al. 2000. Ethylene perception by the ERS1 protein in *Arabidopsis*. Plant Physiol. 123: 1449-1458.
7. Ziegelhoffer, E.C., et al. 2000. Cloning of the *Arabidopsis* WIGGUM gene identifies a role for farnesylation in meristem development. Proc. Natl. Acad. Sci. USA 97: 7633-7638.

SOURCE

ACC Oxidase (aN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of ACC Oxidase 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-12781 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ACC Oxidase (aN-19) is recommended for detection of ACC Oxidase of *Arabidopsis thaliana*, *Lycopersicon esculentum*, and *Nicotiana tabacum* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

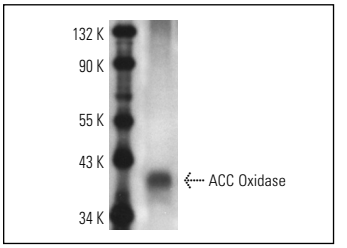
Molecular Weight of ACC Oxidase: 39 kDa.

Positive Controls: *Arabidopsis thaliana* floral extract.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



ACC Oxidase (aN-19): sc-12781. Western blot analysis of ACC Oxidase expression in *Arabidopsis thaliana* floral extract.

SELECT PRODUCT CITATIONS

1. Hudgins, J.W., et al. 2004. Methyl jasmonate-induced ethylene production is responsible for conifer phloem defense responses and reprogramming of stem cambial zone for traumatic resin duct formation. Plant Physiol. 135: 2134-2149.
2. Hudgins, J.W., et al. 2006. Ethylene in induced conifer defense: cDNA cloning, protein expression, and cellular and subcellular localization of 1-aminocyclopropane-1-carboxylate oxidase in resin duct and phenolic parenchyma cells. Planta 224: 865-877.

RESEARCH USE

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