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Product Information

Anti-AtNOS1

produced in rabbit, affinity isolated antibody

Product Number **N9537**

Product Description

Anti-AtNOS1 is developed in rabbit using a synthetic peptide corresponding to amino acids 450-465 located near the C-terminus of AtNOS1, conjugated to KLH, as immunogen. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-AtNOS1 detects recombinant MBP-tagged AtNOS1 by immunoblotting (105 kDa). Staining of MBP-AtNOS1 is specifically inhibited with the immunizing peptide.

Nitric oxide (NO) functions as a signaling molecule and cytotoxic agent in a variety of physiological and immunological processes in animals and humans. NO is synthesized by nitric oxide synthases (NOS), a family of complex and highly regulated enzymes that oxidize arginine to NO and citrulline. Several related NOS genes have been described in eukaryotic species from fungi to vertebrates. In plants, NO serves as a signal in growth, hormonal, and defense responses.¹⁻⁹ NO synthesis in plants appears to be more complex compared to mammals, and includes both reduction of nitrite by nitrate reductase (NR) and the oxidation of arginine to NO and citrulline by NOS. An *Arabidopsis* gene (AtNOS1) has been identified that is needed for NO synthesis *in vivo*.² AtNOS1 protein (62 kDa, 561 amino acids) has biochemical properties similar to mammalian NOS. Yet, it is a distinct enzyme and has no sequence similarity to any known mammalian NOS isoforms. AtNOS1 uses arginine and nicotinamide adenine dinucleotide phosphate (NADPH) and is activated by calmodulin and Ca²⁺. An *Arabidopsis* mutant, *Atnos1*, has been shown to have impaired NO production, organ growth, and abscisic acid (ABA)-induced stomatal movements. Expression of AtNOS1 in *Atnos1*-mutant *Arabidopsis* plants resulted in overproduction of NO. In *Arabidopsis*, NOS is targeted to the mitochondria of leaves and roots, and appears to protect against oxidative damage and dark-induced senescence.¹⁰

Reagent

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

Antibody concentration: ~1.5 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 hazardous 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 1-2 µg/mL is recommended using recombinant MBP-tagged AtNOS1 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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