

Physiological and immunoblot analyses of a nitric oxide synthase (NOS)-like protein of pea (*Pisum sativum* L.)

ABSTRACT

Nitric oxide (NO) functions as a signal molecule in different biological processes in plants, including disease resistance. Its production is related to nitric oxide synthase (NOS). The application of chemicals that induce systemic resistance in plants did not induce NOS activity in pea, suggesting that NO functions upstream of salicylic acid (SA) in the signaling pathway of defense responses in plants. NOS activity was induced in both the incompatible and compatible interactions of pea with *Ralstonia solanacearum* and *Pseudomonas syringae* pv *pisii*, respectively, between 3 h to 6 h post-infiltration, indicating that NOS was involved in both resistance and disease development responses in pea. Antibodies raised against mammalian NOS did not have specificity in detecting a NOS-like protein in pea, suggesting that the pea NOS-like protein could be structurally different from mammalian NOS, and immunodetection of a plant NOS-like protein must be conducted with caution and verified with functional assays.

Keyword: Pea; Nitric oxide synthase (NOS); *Ralstonia solanacearum*; *Pseudomonas syringae* pv *pisii*