Creative Enzymes®

1-aminocyclopropane-1-carboxylate deaminase

Cat. No. EXWM-4590

Lot. No. (See product label)

Introduction

Description	A pyridoxal 5'-phosphate enzyme. The enzyme, found in certain soil bacteria and fungi, catalyses the ring opening of 1-aminocyclopropane-1-carboxylate, the immediate precursor to ethylene, an important plant hormone that regulates fruit ripening and other processes. The enzyme releases an unstable enamine product that tautomerizes to an imine form, which undergoes a hydrolytic deamination. The latter reaction, which can occur spontaneously, can also be catalysed by EC 3.5.99.10, 2-iminobutanoate/2-iminopropanoate deaminase. The enzyme has been used to make fruit ripening dependent on externally added ethylene, as it removes the substrate for endogenous ethylene formation.
Synonyms	1-aminocyclopropane-1-carboxylate endolyase (deaminating); ACC deaminase; 1-aminocyclopropane carboxylic acid deaminase

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 3.5.99.7
CAS No.	69553-48-6
Reaction	1-aminocyclopropane-1-carboxylate + H2O = 2-oxobutanoate + NH3 (overall reaction); (1a) 1-aminocyclopropane-1-carboxylate = 2-aminobut-2-enoate; (1b) 2-aminobut-2-enoate = 2-iminobutanoate (spontaneous); (1c) 2-iminobutanoate + H2O = 2-oxobutanoate + NH3 (spontaneous)
Notes	This item requires custom production and lead time is between 5-9 weeks. We can custom produce according to your specifications.

Storage and Shipping Information

Storage	Store it at +4 ℃ for short term. For long term storage, store it at -20 ℃~-80 ℃.