Creative Enzymes®

(-)-α-pinene synthase

Cat. No. EXWM-5131

Lot. No. (See product label)

Introduction

Description	Cyclase II of Salvia officinalis (sage) gives about equal parts (-)-α-pinene, (-)-β-pinene and (-)-camphene, plus traces of other monoterpenoids. (3S)-Linalyl diphosphate can also be used by the enzyme in preference to (3R)-linalyl diphosphate. The 4-pro-S-hydrogen of geranyl diphosphate is lost. Requires Mg2+ (preferred to Mn2+). The enzyme from Abies grandis (grand fir) gives roughly equal parts (-)-α-pinene and (-)-β-pinene. However the clone ag11 gave 35% (-)-limonene, 24% (-)-α-pinene and 20% (-)-β-phellandrene. It requires Mn2+ and K+ (Mg2+ is ineffective). Synthase I from Pinus taeda (loblolly pine) produces (-)-α-pinene with traces of (-)-β-pinene and requires Mn2+ (preferred to Mg2+). The enzyme from Picea sitchensis (Sika spruce) forms 70% (-)-α-pinene and 30% (-)-β-pinene. The recombinant PmeTPS1 enzyme from Pseudotsuga menziesii (Douglas fir) gave roughly equal proportions of (-)-α-pinene and (-)-camphene plus traces of other monoterpenoids. See also EC 4.2.3.120, (-)-β-pinene synthase; EC 4.2.3.117, (-)-camphene synthase; EC 4.2.3.16, (-)-limonene synthase; and EC 4.2.3.52, (-)-β-phellandrene synthase.
Synonyms	(-)-α-pinene/(-)-camphene synthase; (-)-α-pinene cyclase

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 4.2.3.119
Reaction	geranyl diphosphate = (-)-α-pinene + diphosphate
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 ℃.