Creative Enzymes®

nitrogenase

Cat. No. EXWM-1114

Lot. No. (See product label)

Introduction

Description	Requires Mg2+. It is composed of two proteins that can be separated but are both required for nitrogenase activity. Dinitrogen reductase is a [4Fe-4S] protein, which, with two molecules of ATP and ferredoxin, generates an electron. The electron is transferred to the other protein, dinitrogenase (molybdoferredoxin). Dinitrogenase is a molybdenum-iron protein that reduces dinitrogen in three succesive two-electron reductions from nitrogen to diimine to hydrazine to two molecules of ammonia. The molybdenum may be replaced by vanadium or iron. The reduction is initiated by formation of hydrogen in stoichiometric amounts. Acetylene is reduced to ethylene (but only very slowly to ethane), azide to nitrogen and ammonia, and cyanide to methane and ammonia. In the absence of a suitable substrate, hydrogen is slowly formed. Ferredoxin may be replaced by flavodoxin [see EC 1.19.6.1 nitrogenase (flavodoxin)].

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 1.18.6.1
CAS No.	9013-04-1
Reaction	8 reduced ferredoxin + 8 H+ + N2 + 16 ATP + 16 H2O = 8 oxidized ferredoxin + H2 + 2 NH3 + 16 ADP + 16 phosphate
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 ℃.