Creative Enzymes®

nitrogenase (flavodoxin)

Cat. No. EXWM-1115

Lot. No. (See product label)

Introduction

Description	Requires Mg2+. It is composed of two components, dinitrogen reductase and dinitrogenase, that can be separated but are both required for nitrogenase activity. Dinitrogen reductase is a [4Fe-4S] protein, which, at the expense of ATP, transfers electrons from a dedicated flavodoxin to dinitrogenase. Dinitrogenase is a protein complex that contains either a molybdenum-iron cofactor, a vanadium-iron cofactor, or an iron-iron cofactor, that reduces dinitrogen in three succesive two-electron reductions from nitrogen to diimine to hydrazine to two molecules of ammonia. The reduction is initiated by formation of hydrogen. The enzyme can also reduce acetylene 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. Some enzymes utilize ferredoxin rather than flavodoxin as the electron donor (see EC 1.18.6.1, nitrogenase).

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 1.19.6.1
CAS No.	9013-04-1
Reaction	4 reduced flavodoxin + N2 + 16 ATP + 16 H2O = 4 oxidized flavodoxin + 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 ℃.