glutamate synthase (NADPH)

Cat. No. EXWM-1446

Lot. No. (See product label)

Introduction

Description Binds FMN, FAD, 2 [4Fe-4S] clusters and 1 [3Fe-4S] cluster. The reaction takes place in the opposite direction to that shown. The protein is composed of two subunits, α and β. The α subunit is composed of two domains, one hydrolysing L-glutamine to NH3 and L-glutamate (cf. EC 3.5.1.2, glutaminase), the other combining the produced NH3 with 2-oxoglutarate to produce a second molecule of L-glutamate (cf. EC 1.4.1.4, glutamate dehydrogenase [NADP+]). The β subunit transfers electrons to the cosubstrate. The NH3 is channeled through a 31 Å channel in the active protein. In the absence of the β subunit, coupling between the two domains of the α subunit is compromised and some ammonium can be produced. In the intact αβ complex, ammonia production only takes place as part of the overall reaction.

Synonyms glutamate (reduced nicotinamide adenine dinucleotide phosphate) synthase; L-glutamate synthase; L-glutamate synthetase; glutamate synthetase (NADP); NADPH-dependent glutamate synthase; glutamine-ketoglutaric aminotransferase; NADPH-glutamate synthase; NADPH-linked glutamate synthase; glutamine amide-2-oxoglutarate aminotransferase (oxidoreductase, NADP); L-glutamine:2-oxoglutarate aminotransferase, NADPH oxidizing; GOGAT

Product Information

Form Liquid or lyophilized powder

EC Number EC 1.4.1.13

CAS No. 37213-53-9

Reaction 2 L-glutamate + NADP+ = L-glutamine + 2-oxoglutarate + NADPH + H+ (overall reaction); (1a) L-glutamate + NH3 = L-glutamine + H2O; (1b) L-glutamate + NADP+ + H2O = NH3 + 2-oxoglutarate + NADPH + H+

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 ℃.