

glutamate-tRNA^{Gln} ligase

Cat. No. EXWM-5656

Lot. No. (See product label)

Introduction

Description When this enzyme acts on tRNA^{Glu}, it catalyses the same reaction as EC 6.1.1.17, glutamate-tRNA ligase. It has, however, diminished discrimination, so that it can also form glutamyl-tRNA^{Gln}. This relaxation of specificity has been found to result from the absence of a loop in the tRNA that specifically recognizes the third position of the anticodon. This accounts for the ability of this enzyme in, for example, *Bacillus subtilis*, to recognize both tRNA^{1Gln} (UUG anticodon) and tRNA^{Glu} (UUC anticodon) but not tRNA^{2Gln} (CUG anticodon). The ability of this enzyme to recognize both tRNA^{Glu} and one of the tRNA^{Gln} isoacceptors derives from their sharing a major identity element, a hypermodified derivative of U34 (5-methylaminomethyl-2-thiouridine). The glutamyl-tRNA^{Gln} is not used in protein synthesis until it is converted by EC 6.3.5.7, glutamyl-tRNA synthase (glutamine-hydrolysing), into glutamyl-tRNA^{Gln}.

Synonyms nondiscriminating glutamyl-tRNA synthetase

Product Information

Form Liquid or lyophilized powder

EC Number EC 6.1.1.24

CAS No. 9068-76-2

Reaction ATP + L-glutamate + tRNA^{Glx} = AMP + diphosphate + L-glutamyl-tRNA^{Glx}

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 °C for short term. For long term storage, store it at -20 °C~-80 °C.