

disassimilatory sulfite reductase

Cat. No. EXWM-1686

Lot. No. (See product label)

Introduction

Description

Contain siroheme. The enzyme is essential in prokaryotic sulfur-based energy metabolism, including sulfate/sulfite reducing organisms, sulfur-oxidizing bacteria, and organosulfonate reducers. In sulfur reducers it catalyses the reduction of sulfite to sulfide (reaction 1 in the right to left direction), while in sulfur oxidizers it catalyses the opposite reaction (reaction 2 in the left to right direction). The reaction involves the small protein DsrC, which is present in all the organisms that contain dissimilatory sulfite reductase. During the process an intramolecular disulfide bond is formed between two L-cysteine residues of DsrC. This disulfide can be reduced by a number of proteins including DsrK and TcmB. This enzyme is different from EC 1.8.1.2, assimilatory sulfite reductase (NADPH), and EC 1.8.7.1, assimilatory sulfite reductase (ferredoxin), which are involved in sulfate assimilation.

Synonyms

siroheme sulfite reductase; hydrogen-sulfide:(acceptor) oxidoreductase (ambiguous); DsrAB

Product Information

Form

Liquid or lyophilized powder

EC Number

EC 1.8.99.5

CAS No.

37256-51-2

Reaction

(1) hydrogen sulfide + a [DsrC protein]-disulfide + 2 acceptor + 3 H₂O = sulfite + a [DsrC protein]-dithiol + 2 reduced acceptor + 2 H⁺ (overall reaction); (1a) hydrogen sulfide + a [DsrC protein]-disulfide = a [DsrC protein]-S-sulfanyl-L-cysteine; (1b) a [DsrC protein]-S-sulfanyl-L-cysteine + 2 acceptor + 3 H₂O = sulfite + a [DsrC protein]-dithiol + 2 reduced acceptor + 2 H⁺; (2) a [DsrC protein]-S-sulfanyl-L-cysteine + 3 acceptor + 3 H₂O = sulfite + a [DsrC protein]-disulfide + 3 reduced acceptor + 2 H⁺ (overall reaction); (2a) a [DsrC protein]-S-sulfanyl-L-cysteine + 3 acceptor + 3 H₂O = a [DsrC]-S-sulfo-L-cysteine + 3 reduced acceptor + H⁺; (2b) a [DsrC]-S-sulfo-L-cysteine = sulfite + a [DsrC protein]-disulfide

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.