Product Information

Choline Oxidase from *Arthrobacter globiformis*

Catalog Number C4405
Storage Temperature –20 °C

CAS RN 9028-67-5
EC 1.1.3.17
Synonym: Choline:oxygen 1-oxidoreductase

**Product Description**

Choline oxidase is a flavoprotein, and is a member of the GMC-oxidoreductase family. Choline oxidase catalyzes the four-electron-oxidation of choline to glycine betaine via the intermediate betaine aldehyde, in two sequential FAD-dependent reaction steps. The attachment site of the FAD cofactor to the enzyme has been mapped to His\(^8\) in the protein sequence.\(^3\)

The pH optimum of choline oxidase from *Arthrobacter globiformis* has been reported to be –7.5.\(^4\) Inhibitors of choline oxidase include p-chloromercuribenzoate, and various metal ions such as Cu, Co, Hg, and Ag.

One early study on choline oxidase from *A. globiformis* reported approximate molecular mass values of 71 kDa (SDS-PAGE) and 83 kDa (gel filtration chromatography, GFC).\(^4\) However, a later study of recombinant choline oxidase from *A. globiformis* indicated that the enzyme is a homodimer, with an FAD:monomer ratio of 1:1, with an apparent molecular mass in the range of 117–122 kDa by GFC.

Mass spectrometric analysis of this recombinant choline oxidase indicated a molecular mass for the monomer of 60.6 kDa, resulting in a molecular mass for the dimeric form of 121.2 kDa.\(^5\) Crystal structures for this recombinant choline oxidase from *A. globiformis* have been reported.\(^6,7\)

Choline oxidase from *A. globiformis* has been used for the determination of phospholipase D activity.\(^8\)

**Precautions and Disclaimer**

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

**Preparation Instructions**

Solutions of choline oxidase may be prepared in 10 mM Trizma\(^®\)-HCl, pH 8.0, with 2.0 mM EDTA and 134 mM KCl.\(^9\) Choline oxidase solutions may also be prepared in 200 mM Trizma\(^®\)-HCl, pH 8.0.\(^6\) Another publication cites preparation of 2 mg/mL stock solutions of choline oxidase in carbonate buffer, pH 9.0.\(^10\)

**References**


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