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ProductInformation

Diamine Oxidase
from porcine kidney

Product Number **D 7876**
Storage Temperature -0 °C

Product Description

Enzyme Commission (EC) Number: 1.4.3.6
CAS Number: 9001-53-0
Molecular Weight: 170 kDa[1]
Extinction Coefficient: $E^{1\%}$ = 12.8 (280 nm)[2]

Diamine oxidase from porcine kidney is a homodimer consisting of 2 equal subunits with a molecular weight of 87 kDa each. Each subunit contains one molecule of pyridoxal phosphate and one atom of copper.[2] The enzyme is a glycoprotein containing 5% hexose, 3.3% glucosamine, 2.6% N-acetylglucosamine, and 0.25% N-acetylneuraminic acid. The enzyme exhibits a high affinity for concanavalin A.[3]

Diamine oxidase from porcine kidney catalyzes the oxidation of monoamines, diamines, and histamine to aldehydes, ammonia, and hydrogen peroxide. The pH optimum is 6.3-7.4 when cadverine and histamine are utilized as substrates.[2] The activity of the enzyme at pH 7.2 can be determined utilizing putrescine as the substrate. This enzyme is classified as a copper amine oxidase and it is a key enzyme in nitrogen metabolism.

Diamine oxidase does not require any activators, other than copper. It is inhibited completely by diethyldithiocarbamate (5×10^{-2} M). It is also inhibited (IC_{50} values) by phenylhydrazine (10^{-7} M), semicarbazide (10^{-6} M), cyanide (5×10^{-4} M), and isonicotinic acid hydrazide (5×10^{-3} M).[2]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This enzyme is soluble in 100 mM sodium phosphate buffer, pH 7.2 (10 mg/ml).

References

1. Rinaldi, A., et al., Diamine oxidase from pig kidney: new purification method and amino acid composition. Prep. Biochem., **12**, 11-28 (1982).
2. Methods in Enzymology, Vol. **17B**, Taylor, H., and Tabor, C. W., Eds., Academic Press (New York, NY: 1971), pp. 735-740.
3. Shah, M.A., and Ali, R., The glycoprotein nature of pig kidney diamine oxidase. Role of disulphide groups and arginine residues in the concanavalin A-diamine oxidase interaction. Biochem. J., **253**, 103-107 (1988).

TMG/NSB 12/02