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A NOVEL SEMICARBAZIDE SENSITIVE AMINE OXIDASE FROM BOVINE LIVER MITOCHONDRIA MATRIX: A PRELIMINARY STUDY

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Copper-containing amine oxidases (Cu-AO) represent a heterogeneous class of enzymes present in numerous living systems. The oxidation of primary amines by Cu-AOs produces the corresponding aldehyde, ammonia and hydrogen peroxide.

The present study reports preliminary results on a novel amine oxidase activity in bovine liver mitochondria lysates (MMAO). The activity was found in the soluble mitochondrial fraction and was inhibited by semicarbazide. Various substrates characterized by different chain length and charge distribution and some inhibitors were used as "probes" of the bovine MMAO active site properties. We found that the best substrates of bovine MMAO are spermine and long aliphatic linear monoamines. Furthermore, a high sensitivity of the catalytic efficiency on ionic strength was also highlighted. A preliminary comparison of the kinetic behaviour of bovine MMAO with that of BSAO (1) and rat MMAO (2) was performed.

Further studies are in progress to individuate other potential substrates and inhibitors of bovine MMAO, with the aim to purify this protein and to study its physiological role.

References:

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