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AMINOALDEHYDE DEHYDROGENASE OF OAT SHOOTS

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Polyamines in plants are metabolized to amino acids via aminoaldehydes (AALds). In the catabolic pathway, aminopropion aldehyde and aminobutyraldehyde are oxidized to β -alanine and GABA respectively by AALd dehydrogenase. On the other hand, a osmoprotectant betaine (BT) is synthesized from choline via betaine aldehyde (BTald). In the biosynthetic pathway, BTald is oxidized by BTald dehydrogenase.

It was reported recently that transgenically expressed BTald dehydrogenase showed AALd dehydrogenase activity [1]. In this study, we purified AALd dehydrogenase from oat shoots and examined the substrate specificity of the enzyme. After hydroxyapatite column chromatography, the fraction of AALd dehydrogenase showed BTald dehydrogenase activity. However, AALd dehydrogenase purified by final 5'-AMP Sepharose column chromatography had little BTald dehydrogenase activity.

1. Claudine et al. *Plant Physiol.* 113:1457 (1997)