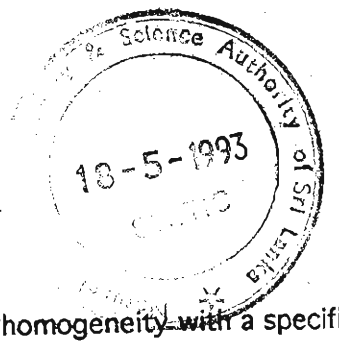

Abstract

Lactate dehydrogenase from *Setaria digitata* was purified to homogeneity with a specific activity of 246. The purification involved $(NH_4)_2SO_4$ fractionation and affinity chromatography on N(6-aminohexyl) oxamate Sepharose 4B. Subunit molecular weight of Lactate dehydrogenase was 40K Da as determined by SDS-PAGE. Optimum pH for the forward reaction (pyruvate reduction) was pH 6.8 - 7.4 and for the reverse reaction (lactate oxidation) the pH optimum was pH 9.0-9.8 K_m and K_{cat} values observed for the pyruvate reduction with respect to pyruvate was 0.21 mM and $19x10^3$ min respectively and with respect to NaDH K_m was 0.06 mM K_{cat}, $9.6x10^3$ min. For the lactate oxidation the K_m and K_{cat} values with respect to lactate was 8.47 mM and $1.8x10^3$ min respectively and with respect to NAD^+ K_m was 0.17 mM and K_{cat} was $1.2x10^3$ min. The enzyme was stable upto 50°C. The enzyme was inhibited by Ag^+. The inhibition was uncompetitive with a K_i value of 0.31μM. Inhibition of Hg^{2+} was noncompetitive and the K_i value was 0.11mM. Suramine strongly inhibited the enzyme activity, the K_i value being 1μM. Amino acid analysis reveals a high aspartate, glutamate and glycine content.