PURIFICATION OF LACTATE DEHYDROGENASE FROM CATTLE FILARIAL PARASITE SETARIA DIGITATA

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In filarial parasites the major pathway for obtaining energy is glycolysis[1]. For continuation of glycolysis lactate dehydrogenase is necessary to regenerate NAD^+.[2] Thus any specific property of this enzyme can be used as a target for chemotherapeutic attack.

The cattle filarial worms (Setaria digitata) were collected from the peritonial cavity of slaughtered cattle. The worms were homogenized in 0.15M KCl and centrifuged at 35,000g for 2h. The retained lactate dehydrogenase activity of the supernatant was 85%. Further purification

by ammonium sulphate fractionation showed that 35-70% precipitate contained the highest enzyme activity. The recovery was 56%. The enzyme solution obtained by $(NH_4)_2SO_4$ fractionation was purified using the affinity gel oxamate Sepharose-4B. The purified enzyme obtained had a folds purification of 307 and specific activity was 246 units/mg protein. Recovery was 23%. The purified enzyme was shown to be homogenous by polyacrylamide gel electrophoresis.

References:

1. Wang, E.J. and Saz, H.J. (1974), J. Parasitol. 60. 316 - 321.

2. Walter, R.D. (1979), Tropenmed, Parasit, 30, 463.