P67

Enzymatic Properties of the Aerobic Respiratory NADH Oxidase System in *Bacillus cereus* KCTC 3674

Young Jae Kim

Department of Microbiology, Changwon National University, Sarim-dong, Changwon, Kyungnam 641-773, Republic of Korea

Abstract

Membrane vesicles prepared from *Bacillus cereus* oxidized NADH, but very little deamino-NADH as a substrate. The maximum activity of membrane-bound NADH oxidase was obtained at about pH 8.5 in the presence of 0.1 M KCl (or NaCl). and exhibited an apparent K_m value of approximately 62±5 μM for NADH (data not shown). Respiratory inhibitor 2-heptyl-4-hydroxyquinoline-*N*-oxide (HQNO) inhibited the NADH oxidase activity by about 90% at a concentration of 40 μM. Rotenone and capsaicin also inhibited the activity by about 65% and 75% at a concentration of 100 μM and 300 μM, respectively. Interestingly, the NADH oxidase activity was highly sensitive to $AgNO_3$. On the other hand, the NADH:ubiquinone-1, NADH:ferricyanide, NADH:menadione, and NADH:DCPIP oxidoreductases of the NADH oxidase system were quite different in the enzymatic properties from each other.

Keywords: *Bacillus cereus* KCTC 3674 · aerobic respiratory chain-linked NADH oxidase system · respiratory inhibitor