## Effect of Alloxan-Diabetes and Subsequent Treatment with Insulin on Kinetic Properties of Succinate Oxidase Activity from Rat Liver Mitochondria

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We evaluated early and late effects of alloxan-diabetes and subsequent insulin treatment on the kinetic properties of succinate oxidase (SO) in rat liver mitochondria. Diabetic state lowered the SO activity; insulin treatment was effective in restoring the activity only in oneweek diabetic rats. The energies of activation in low and high temperature ranges ( $E_{\rm H}$  and  $E_{\rm L}$ ) decreased significantly in diabetic animals; once again insulin treatment was partially effective only in the one-week diabetic group. The total phospholipids (TPL) and cholesterol (CHL) contents did not change in one-week groups. In one-month diabetic animals TPL decreased while CHL increased; insulin treatment induced further changes without restoring normality. The lysophospholipid (Lyso), sphingomyelin (SPM), phosphatidylinositol (PI) and phosphatidylserine (PS) content increased in the diabetic state while phosphatidylcholine (PC) and phosphatidylethanolamine (PE) decreased. Insulin treatment had a partial restorative effect. The changes in  $E_{\rm H}$  correlated negatively with SPM. The phase transition temperature,  $T_{\rm t}$ , decreased in diabetic and insulin-treated groups. These changes correlated positively with the ratios of TPL/PI and TPL/PS. The membrane fluidity decreased in the diabetic state; insulin had a restorative effect only in the one-week group.

Key words: Alloxan-Diabetes, Succinate Oxidase, Arrhenius Kinetics