

OXIDATIVE STRESS IN THERMOTOLERANT ERYTHROCYTES

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Hyperthermia can induce lipid peroxidation in nucleated cells. The thermotolerance in human erythrocytes was observed in our earlier experiments. Conjugated dienes and TBARs as markers of reactive oxygen species effects on plasma membrane in thermotolerant cells have been studied.

The preincubation at 44°C for 15 min. and then for 3 h at 37°C induced thermotolerance in cells to second heat shock at 48.5°C. TBARs were determined in lipid extracts by the Stock and Dormandy method (1971). Conjugated dienes were assayed spectrophotometrically in membrane lipid extracts. No statistically significant changes in lipid peroxidation levels for both markers were observed.

Absence of changes in lipid peroxidation in the erythrocyte membrane after heat treatment may indicate that reactive oxygen species do not play a role in the thermotolerance of erythrocytes.