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The Regulation of Brain Mitochondrial Calcium-Ion Transport

THE ROLE OF ATP IN THE DISCRIMINATION BETWEEN KINETIC AND MEMBRANE-POTENTIAL-DEPENDENT CALCIUM-ION EFFLUX MECHANISMS

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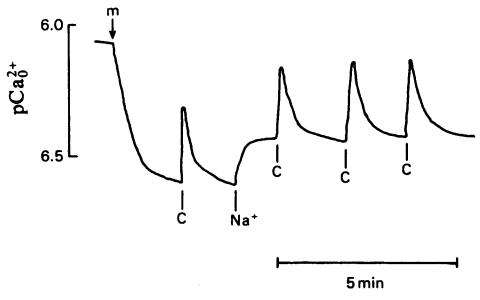
Mitochondria from guinea-pig cerebral cortex incubated in the presence of P_i or acetate are unable to regulate the extramitochondrial free Ca^{2+} at a steady-state which is

decrease to observe potential-dependent efflux 'Free' mitochondria (i.e. those not contained


160
100



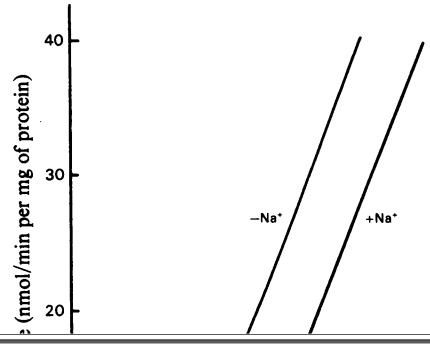


Fig. 4. *The effect of Na^+ on the set-point for the buffering*

'massive-loading' of the matrix with in excess of to greatly enhance ΔpH and decrease $\Delta\psi$ (see also

1967). Because of the high Ca^{2+} concentrations used in massive-loading experiments, and because of the finding that added adenine nucleotides were not time-dependent loss of Ca^{2+} from the matrix, $\Delta\psi$ continues to decrease, from 106 mV to 92 mV (Fig. 3 of Ramachandran & Bygrave, 1978). These mem-

are less than 0.2 nmol of Ca^{2+}/min per mg of particle

Lehninger, A. L., Carafoli, E. & Rossi, C. S. (1967) *Adv.*