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Pyridine nucleotide redox state parallels production of aldosterone in potassium-stimulated adrenal glomerulosa cells

[NAD(P)H fluorescence/cytosolic Ca^{2+}/rat glomerulosa cells/steroidogenesis]

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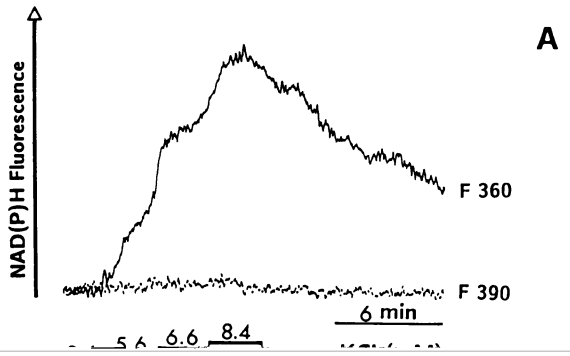

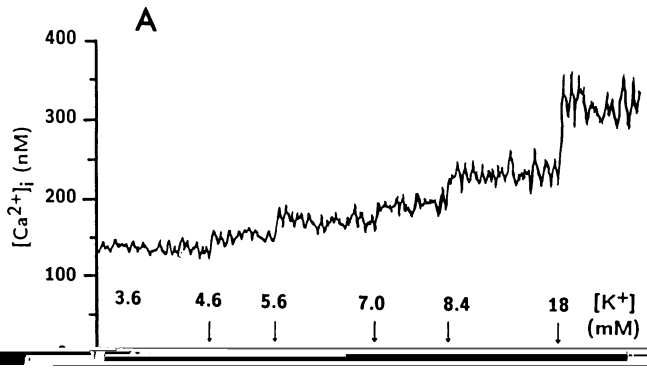

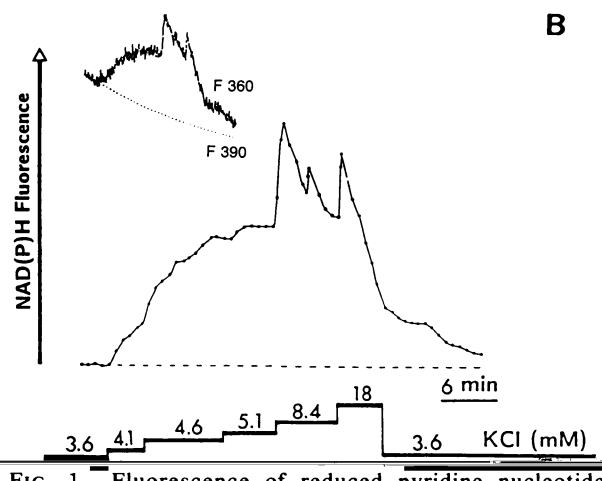

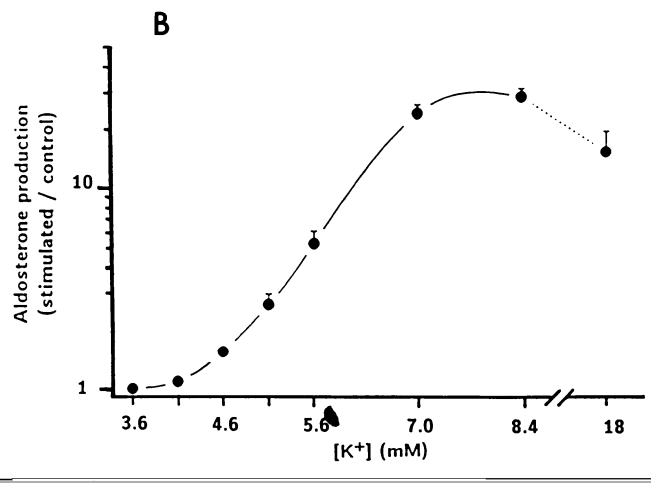

FIG. 1. Fluorescence of reduced pyridine nucleotides, NAD(P)H, as a function of extracellular K^+ measured in single adrenal glomerulosa cells. The traces are representative of 10 inde-

FIG. 2. $[Ca^{2+}]_i$ (*A*) and aldosterone production (*B*) as a function of extracellular K^+ concentrations in suspensions of rat adrenal glomerulosa cells. The trace in *A* is representative of four similar

A NADPH-to-NADP ratio. This was taken as evidence that the

may also favor steroidogenesis by promoting cholesterol transport into the mitochondria (33).

In summary, the amplitude and kinetics of NAD(P)H

9. Haning, R., Tait, S. A. S. & Tait, J. F. (1972) *Endocrinology* **87**, 1147–1167.
10. Braley, L. M. & Williams, G. H. (1977) *Am. J. Physiol.* **233**,