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Letter to the Editors

Potentiation of Postjunctional Cholinergic Sensitivity of Rat Diaphragm Muscle by High-Energy-Phosphate Adenine Nucleotides

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I would like to make the following comments on the above titled paper of D.A. Ewald (*J. Membrane Biol.* **29**:47–65, 1976):

A physiological function had been already suggested for ATP released after indirect stimulation at the rat diaphragm (*see* Ribeiro & Walker, 1973). Such function results from a presynaptic effect of ATP, since ATP, 0.01 to 4 mM reduces the output of transmitter to nerve stimulation either in the presence of high Mg^{2+} or tubocurarine (Ribeiro & Walker, 1973; 1975).

Maximum reduction on the quantum content of the end-plate potentials was always obtained with concentrations of ATP over 0.2 mM, which is much less than the minimum concentration of ATP used by Ewald in his experiments. On the other hand from the results described by Silinsky (1975) it is possible to assume that the ATP concentration could be as high as 0.1 mM after brief repetitive stimulation, that means at high outputs of transmitter. These concentrations are of same order as those we used and also much smaller than the minimum used in the Ewald experiments. Furthermore adenosine had also a presynaptic effect at the same concentrations of ATP (Ginsborg & Hirst, 1972). Therefore, it seemed not quite possible that the ATP released in the experiments of Silinsky and Hubbard (1973) could have a post-synaptic effect as was suggested by Ewald.

References

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J.A. Ribeiro
Instituto Gulbenkian de Ciencia
Laboratorio de Farmacologia
Oeiras, Portugal