

References

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Antagonistic action of vitamin D₂ on noradrenaline-induced lipolysis *in vitro*

SIR,—Results obtained with prostaglandin E₁ and digitoxin suggested that a possible role was played by calcium in the lipolysis induced by noradrenaline (Fassina & Contessa, 1966, 1967). The variations of the calcium concentration in the incubation medium of epididymal fat modified the stimulating action of noradrenaline on lipolysis. We therefore investigated the influence on the same lipolytic process of vitamin D₂, a drug known to have a specific effect on calcium metabolism.

Vitamin D₂ acts as an inhibitor of lipolysis *in vitro* (Table 1). The drug antagonizes the noradrenaline-induced lipolysis starting from a concentration of 10⁻⁶M, as indicated by the decreased concentration of free fatty acids as well as of glycerol in the incubation medium of rat epididymal fat. The basal lipolysis was not significantly affected.

TABLE 1. INHIBITION BY VITAMIN D₂ OF NORADRENALINE-INDUCED LIPOLYSIS *in vitro*

Drugs in the incubation medium Molar conc.	Δ FFA* μ-equiv./g/150 min	Δ Glycerol* μmoles/g/150 min
Noradrenaline 0.2 × 10 ⁻⁶	20.86 ± 0.77	9.31 ± 0.70
Noradrenaline " + Vit. D ₂ 10 ⁻⁶	15.03 ± 1.19	5.25 ± 0.88
Noradrenaline " + Vit. D ₂ 10 ⁻⁴	10.54 ± 1.31	3.34 ± 0.40
Noradrenaline " + Vit. D ₂ 10 ⁻³	5.25 ± 0.35	2.10 ± 0.20

Rat epididymal fat (100 ± 10 mg) was incubated in 2 ml of Krebs-Ringer bicarbonate buffer containing 2.5% bovine albumin, at 37° for 150 min, in a metabolic shaker. Free fatty acids (FFA) (Dole, 1956) and glycerol (Korn, 1955) were titrated in the incubation medium. Drugs were added to the medium before introducing the fat. Vitamin D₂ was dissolved in ethanol. The same volume of ethanol (0.05 ml) was added in all assays.

* FFA and glycerol absolute increase over control (fat incubated without drugs). Each value represents the mean ± s.e. of six experiments.

Vitamin D₂ dissolved in ethanol was inactivated by an exposure to ultraviolet light for 16 hr. As indicated by Cima, Levorato & Mantovan (1967), after this period the chromatographic spot of vitamin D₂ almost completely disappeared, but the inactivated drug still inhibited noradrenaline-induced lipolysis. Consequently, the effect of vitamin D₂ on lipolysis does not seem to be connected with the specific vitamin action.

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