EFFECTS OF ADRENAL CORTICAL HORMONES

ON

CO_2 FIXATION AND GLUCONEOGENESIS

BY

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SUMMARY

Various steroid hormones were investigated for their effects on CO_2 incorporation into carbohydrate by rat liver slices. Testosterone, progesterone, dehydroisoandrosterone and desoxycorticosterone did not affect the C^{14} incorporation from $C^{14}O_2$ and pyruvate-1-C^{14} or pyruvate-2-C^{14} into carbohydrate. However, 2α-methyl-9α-fluoro-cortisol and triamcinolone enhanced the incorporation of C^{14} from $C^{14}O_2$, pyruvate-1-C^{14} and pyruvate-2-C^{14}. When pyruvate-2-C^{14} was used as substrate, twice as much C^{14} appeared in glucose as when pyruvate-1-C^{14} was used.

In the presence of actinomycin the response to triamcinolone was reduced although actinomycin alone was without effect on C^{14} glucose formation.

Puromycin was without effect on C^{14} glucose formation and it did not block the effect of triamcinolone on incorporation of $C^{14}O_2$ into glucose.

Incorporation of alanine carbon into protein was inhibited by triamcinolone and puromycin but was not influenced by actinomycin. Triamcinolone and puromycin additively inhibited protein synthesis.

Pretreatment of rats with either actinomycin or puromycin did not abolish the <u>in vitro</u> response of liver slices to triamcinolone stimulation of CO_2 incorporation into glucose. Triamcinolone added to liver slices was without effect on α-amino nitrogen levels.

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