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# Requirement for RNA and protein synthesis for induced regression of the tadpole tail in organ culture

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## Abstract

A simple method for maintaining the tail of *Rana temporaria* tadpoles for up to 8 days in organ culture has been described. Regression of the isolated tail was induced by the addition of triiodothyronine to the culture medium. The rate of regression and the increase in activity of some hydrolytic enzymes were comparable to those observed in the tails of intact tadpoles undergoing metamorphosis.

Cultured tails are capable of synthesizing RNA and protein as seen from the incorporation of $H^3$-labeled uridine and $C^{14}$-labeled amino acids. Hormone-induced regression was accompanied by an accelerated synthesis of both RNA and protein. Actinomycin D, puromycin, and cycloheximide abolished regression and increase in hydrolase activity in the isolated tails induced by triiodothyronine. Under conditions in which regression was inhibited, actinomycin D and cycloheximide blocked the incorporation of $H^3$-uridine into RNA, and puromycin and cycloheximide that of $C^{14}$-amino acids into protein. A continuous generation of RNA and protein is associated with the hormone-induced regression of the isolated tadpole tail.

## Abbreviations

$T_3$, 3,5,3′-triiodo-l-thyronine; RNA, ribonucleic acid; DNA, deoxyribonucleic acid; Tris, 2-amino-2-hydroxymethyl-1,3-propanediol