

TISSUE INTERACTIONS DURING TAIL REGENERATION IN THE URODELE AMPHIBIAN, *Plethodon cinereus*

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Limb regeneration in urodele amphibians is a well documented phenomenon and while investigations of urodele tail regeneration are relatively sparse, much is inferred from studies on the limb. Furthermore, most regeneration studies employ either aquatic larval ambystomids or the adult red-spotted newt, *Notophthalmus viridescens*, which is also aquatic. This choice of experimental organisms and the selection of the limb as the model system have created a paradoxical situation since a majority of urodele species are plethodontids and a majority of these have anatomical specialization for tail loss (Wake and Dresner, J. Morph. 122:265, 1967) and regeneration (Dinsmore, J. Exp. Zool., in press).

With these points in mind, experiments on one of the plethodontid species native to Mount Desert Island (*Plethodon cinereus*) have been designed to elucidate mechanisms associated with tail regeneration and either substantiate or refute ideas that tail regeneration is essentially the same process as limb regeneration.

Data obtained from initial experiments have demonstrated that, unlike limb muscle, myofibers in caudal myotomes do not normally, nor can they be experimentally induced to, participate in epimorphic regeneration in *Plethodon cinereus* although myofibers develop normally within the regenerate (Dinsmore, J. Exp. Zool., in press). The most likely source for blastema cells and, therefore, the tissues of the regenerate, is dedifferentiation and metaplastic transformation of the connective tissue cells in the well-developed dermis as well as from the intervertebral cartilage which remains associated with the stump following tail autotomy (Dinsmore, Am. Zool., 16:207, 1976).

Another parameter being examined is the inductive morphogenetic interactions between specific tissues during the initiation and elaboration of tail regeneration. Carlson (Devel. Biol., 39:263, 1974 and Devel. Biol. 47:269, 1975), has shown that by rotating a cuff of skin 180° around the long axis of the axolotl limb and subsequently amputating through the rotated skin, more than 80% of the regenerates are "multiple" or hypermorphic. Pilot studies on *Plethodon cinereus* show that in the tail, rotated skin has no comparable effect on the subsequent regeneration of the tail, control regenerates being identical with those arising from stumps with rotated skin.

The summary results of these investigations indicate clear-cut and significant differences between the morphogenetic interactions required during limb replacement and those occurring in tail regeneration.

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EFFECT OF VARIOUS INHIBITORS ON SUGAR TRANSPORT IN TEASED RENAL TUBULES OF THE WINTER FLOUNDER
Pseudopleuronectes americanus

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The present report deals with the effects of several agents known to alter sugar transport in various cell types on the multiple sugar transport systems at the antiluminal face of flounder renal tubules. In this way it is hoped to obtain further information on the molecular properties of the transport proteins which are involved.

Cytochalasin B (CyB), para-hydroxy-mercuribenzoic acid (PMB), para-chloromercuribenzenesulfonic acid (PCMBs), and 1-fluoro-2,4-dinitrobenzene (FDNB) were incubated with teased proximal tubules from