EVALUATION OF β-CAROTENE 15,15'-MONOOZYGENASE CONVERSION IN TWO ANURA SPECIES

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ABSTRACT

It is unknown whether pro-vitamin A supplements used in captive diets of amphibian insectivores provide the animals with nutrients they can convert for their vitamin A needs. This research sought to evaluate if activity of β-carotene 15,15'-monooxygenase was present in the liver and small intestine of two anura species, as gauged by the conversion of β-carotene to retinal.

Liver and small intestine from wild adult cane toads (*Bufo marinus*; n=9) and Cuban tree frogs (*Osteopilus septentrionalis*; n=3) were processed to achieve an enzyme fraction and then incubated at 37°C for 30 minutes with either a blank (hexane) or treatment (β-carotene in hexane) solution. Chicken duodenum and liver were used as comparison standards. Reverse phase-high performance liquid chromatography was used to quantify the retinal found.

There was no difference in the amount of retinal found between the blank and β-carotene treatment samples of anura livers (2.61 and 3.45 pmol/mg protein/30min, respectively; P = 0.7469) and small intestines. The lack of conversion suggests the inability of these species to use β-carotene as a vitamin A source in their fully metamorphosized, adult life stage. These findings warrant further investigation on the conversion capability of other amphibian species and also their various life stages.