

Poster #4

Vitellogenin Detection in *Caiman latirostris* (Crocodylia: Alligatoridae). A Tool to Assess Xenoestrogen Exposure.

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Environmental pollution with endocrine disrupting compounds (EDCs) has adverse effects on ecosystem health. *Caiman latirostris* are widely distributed in South American aquatic ecosystems. Caimans have physiological and ecological characteristics that would make them both particularly vulnerable to EDCs exposure and an appropriate candidate as sentinel species. Vitellogenin (Vtg) is a yolk precursor protein, synthesized by the liver of oviparous vertebrates in response to estrogen. Males do not synthesize Vtg, unless they are exposed to xenoestrogens. The aims of our study were to evaluate Vtg pattern of induction in juvenile males and to characterize Vtg as a biomarker to evidence xenoestrogen exposure. The first step was to develop a specific and sensitive assay for *C. latirostris* Vtg. Plasmatic Vtg from *C. latirostris* females injected with estradiol-17 β (E₂) was purified by precipitation with EDTA-MgCl₂ followed by ionic exchange chromatography. Purified Vtg was used to generate a polyclonal antibody that was purified by affinity chromatography. Western blots assessed the specificity of the antibody. A competitive antibody capture ELISA was developed to quantify plasmatic Vtg, allowing detection of 1 ng/ml. Pre-induction plasmatic Vtg was not detectable in males. Vtg induction was evaluated in response to one or two (7 days apart) low doses of E₂. A priming effect was observed following the second E₂ dose with a 13-fold increase in circulating Vtg. Hepatic synthesis was confirmed by immunohistochemistry. Results presented here suggest that detection of plasmatic Vtg in male caimans might become a valuable tool for biomonitoring the environment for xenoestrogen pollution.

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