Applications of in vivo tests for estrogen effects in the reed frog *Hyperolius argus*

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Juvenile Hyperolius argus develop premature adult female coloration (PFC) when exposed as larvae to estrogens. Chemically induced color change in H. argus has been considered for use as an assay to screen estrogenic compounds. We assessed the effects of proposed hormone mimics (pesticides and phytoestrogens) on H. argus coloration. The o,p' isomers of DDT congeners induced PFC at 2.8 micro molar whereas hytoestrogen effects were small or non existent at 2.8 (coumestrol, equol and genestein), 14 (quercetin), or 28 micro molar (naringenin). We used a survey to test if the color morphologies induced by chemical treatment could be consistently interpreted by evaluators given only photographic examples of the phenotypes in question. Volunteers age six to 57 were able to distinguish, with less than 5% error, animals that showed from animals that did not show PFC. In summary, we showed that proposed environmental estrogens induce an estrogen dependent color change in H. argus that can be interpreted consistently by a general audience. This work was supported by a Howard Hughes Predoctoral Fellowship in Biological Sciences and NSF grants IBN-9513362 and IBN-9508996.