

SHRUTHI SREEKUMAR, COLLEEN J. NOLAN and CAROL Z. PLAUTZ, Dept. of Biology, Shepherd University, Shepherdstown, WV, 25443. Effects of Roundup and its constituents on the Aromatase protein in the steroidogenic pathway of *L. palustris*.

Roundup is an agricultural herbicide that is composed of chemicals that have been linked to alterations in steroidogenesis and reproduction. We have observed altered reproductive activity in the hermaphroditic pond snail *Lymnaea palustris* following exposure to Roundup and its constituents, glyphosate and diquat dibromide (DD; Arumuganathan *et al.* 2016). Since steroid hormones are key players in reproduction, we also investigated alterations in sex hormone abundance. A second study found testosterone was decreased following exposure to Roundup, while concentrations of estradiol varied after chronic exposure to glyphosate and DD (Phillips *et al.* 2016). The steroidogenic enzyme Aromatase (P450AROM) converts testosterone into estradiol. We hypothesize that Roundup or its constituents may be altering the activity or abundance of Aromatase which in turn affects the amounts of testosterone and estradiol present in *L. palustris*; these altered levels of reproductive hormones may contribute to the alterations in fecundity. To observe if Aromatase is targeted by Roundup constituents in the steroidogenic pathway of *L. palustris*, we exposed snails to glyphosate (3.5 mg/L) or DD (0.14 mg/L) for one to three weeks. Following treatments, the ovotestis, brain, and kidneys were harvested and prepared for protein analysis, and analyzed for aromatase abundance by Western Blotting.

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