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Dear JoVE Editor,

I am pleased to submit our manuscript for review for publication in the Journal of Visualized Experiments (JoVE). The article is titled, "Microinjection of DNA into *Xenopus* eye buds, and imaging of GFP expressing optic axonal arbors in intact, living *Xenopus* tadpoles". It describes a specialized technique to express exogenous DNA encoding GFP- and/or specific mutant constructs - in small numbers of optic neurons in *Xenopus laevis* embryos. With this method, we can perturb molecular signaling activities in single GFP expressing optic neurons in the developing embryo. This allows us to determine cell autonomous gene function during various stages of optic neuron development. In our laboratory, we apply this technique to determine how distinct molecular signaling interactions regulate arborization of individual optic axons in intact, living tadpoles. Other laboratories use this method to assess molecular mechanisms regulating optic neuron fate selection, differentiation and pathfinding.

This article is ideal for publication in JoVE. The success of the microinjection and *in vivo* imaging that we describe depends on fine motor skills and intense hand-eye coordination, as well as an understanding of specific stages and corresponding morphologies of the *Xenopus* embryo and tadpole. These methods are difficult to explain in writing and are best demonstrated visually. The ongoing popularity of the *Xenopus* embryo and tadpole as a model for developmental biology (due to its external development, amenability to micromanipulation, and genetic similarity to humans) underscore the need to describe and publish the details of this technique. Publication of a video article describing our method for expressing exogenous DNA in single optic neurons, and imaging GFP optic axonal arbors in living tadpoles in JoVE would be extremely helpful for both students and experienced researchers in the field of developmental biology.

Thank you for considering our article for publication in JoVE. Please do not hesitate to contact me if you have any additional questions.

Sincerely,



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