Identifying Apple Snail Sequences Suitable for RNAi Pesticide Design

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Apple snails are an invasive species in the southeastern United States, who host the rat lungworm which is very detrimental to humans. Currently the main control method for apple snails is physical cleanups of local waterways, which is quite inefficient. No apple snail specific pesticides are currently available. To attempt to combat this issue, I am trying to identify RNA sequences only found in the apple snail, more specifically Marisa cornuarietis, suitable for the development of RNA interference (RNAi) based pesticides. After selecting 20 genes essential for survivability and screening their sequences against all other organisms with sequenced genomes, I successfully identified apple snail specific sequences suitable for designing RNAi targets to 5 essential genes. Based on this, the development of apple snail specific RNAi molecules appears feasible. The next step in this project will involve direct testing of these RNAi molecules on Marisa cornuarietis apple snail survivability.

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