

Public Abstract

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Graduation Term:FS 2016

Department:Veterinary Pathobiology

Degree:PhD

Title:Intermedilysin-mediated cell ablation in the rat and zebrafish

The goal of our study was to test a new technology to selectively destroy cells. Such technology is important for studying cell function and modeling human diseases. By engineering rats which express a receptor on red blood cells or neurons, we can target death of these cells when a toxin is administered. The toxin binds specifically to the receptor, leading to cell lysis. Using this system we were able to induce a model for hemolytic anemia and for death of neurons that are important in Parkinson's disease. We are also testing the application of this system in zebrafish targeting motor neurons. This novel system will have wide application for any studies in any species that can benefit from selective cell ablation in vivo.