# Zebrafish popular with researchers

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Zebrafish are the new fruit flies. And it's not just because they breed like rabbits.

Generations of high school students learned about genetics and developmental biology by breeding and studying fruit flies (*Drosophila melanogaster*).

Fruit flies were also one of the most important research animals because they reproduce quickly and, well, fruitfully; they don't require much love and attention; and they share many genes and proteins with humans.

Now there's a new kid in town: The zebrafish is becoming increasingly popular among researchers, such as Dr. Xiao-Yan Wen.

Wen already has more than 1,000 zebrafish in his state-of-the-art lab where he and others perform chemical genetic screens in which chemicals or drugs from a large library of compounds are tested for their effects on early zebrafish development. Because the tests are carried out on a complete, developing organism—a vertebrate in this case--researchers get more detailed and complex information about the impact of the chemical than if they were testing them on cell cultures.

Wen is director of St. Michael's Zebrafish Facility and its Zebrafish Centre for Advanced Drug Discovery.

Zebrafish produce lots of eggs – a healthy mating pair can produce 100 to 200 a week. Fertilization and development occur externally, so

researchers can directly observe and manipulate the embryoes. Plus, they are transparent, so researchers can see what's going on, or inject them with fluorescent dye.

Wen's primary focus has been cardiovascular disease, the country's top public health threat. Wen's team has already identified one drug, rosuvastatin—a cholesterol-lowering statin sold as Crestor by AstraZeneca—that suppressed the growth of transplanted human prostate cancer cells in mice. That research appeared in the September 2010 issue of the journal European Urology.

However, this screening process is labor-intensive. It takes one experienced technician about three months to screen 1,000 compounds in zebrafish embryoes. Wen's team has received $2 million from the Canada Foundation for Innovation to build the Zebrafish Centre for Advanced Drug Discovery, which would be the first automated high-throughput zebrafish screening facility in Canada and one of the most advanced screening facilities in the world.

Provided by St. Michael's Hospital