Research Tools


# Transgenic Zebrafish for Studying Neutrophil Chemotaxis and Inflammation

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**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in a transgenic zebrafish animal model for studying neutrophil chemotaxis and inflammation.**

## Overview

Neutrophils, the most common type of white blood cells, undergo a process called chemotaxis that helps them travel toward sites of inflammation. Because inflammation plays a central role in the pathogenesis of many diseases—including heart disease, asthma, arthritis and inflammatory bowel disease—learning more about the mechanisms that regulate neutrophil chemotaxis could provide new therapeutic targets for autoinflammatory syndromes and other disorders.

## The Invention

UW-Madison researchers have developed an animal model for studying neutrophil chemotaxis. They generated transgenic zebrafish that express enhanced green fluorescent protein (EGFP) through the myeloperoxide promoter. Myeloperoxide is a protein that neutrophils produce to kill bacteria and other pathogens. The EGFP labels the zebrafish neutrophils, allowing their location and movement to be detected using a microscope.

## Applications

- Analyzing inflammation
- Screening for drugs that inhibit the inflammatory response

## Key Benefits

- Provides an *in vivo* research tool for studying and quantifying inflammation
- Could be adapted for high throughput screening
- May lead to new therapeutic targets for autoinflammatory syndromes and other diseases in which inflammation plays a key role
- Zebrafish have many advantages as an animal model, including low cost, short experimental time, accessibility to all developmental stages, easy manipulation for automated or visual screens, rapid vertebrate organogenesis, statistically significant number of animals available per test, easy drug administration and minimal amount of drug required.

## Additional Information

**For More Information About the Inventors**

- Anna Huttenlocher

**Tool Field**

- Research Tools : Animal Disease Models

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854