**Zebrafish International Resource Center (ZIRC)**

Zebrafish (Danio rerio) is a premiere organism to study vertebrate development and genetics. Powerful techniques allow efficient generation and recovery of zebrafish mutations. Ongoing genetic screens have identified over 7,000 mutations in zebrafish affecting genes that regulate developmental patterning, organogenesis, physiology and behavior. The functions of many of these genes are conserved among vertebrate groups. Thus, analysis of zebrafish mutations provides insights into gene functions in other vertebrates, including humans.

Systematic genetic research on zebrafish began at the University of Oregon and for many years Eugene was the only place it was performed. Recently, however, international interest in this organism has grown tremendously (Balter, 1995; Eisen, 1996; Travis, 1996); studies of the embryology and genetics of zebrafish and the recent identification of over 7,000 genetic mutations have led to a dramatic increase in the number of laboratories using this organism to study the basic mechanisms of vertebrate development. Until recently these genetic stocks were distributed among more than 100 laboratories in 28 countries. To make room for new mutants, laboratories must discontinue some of their current stocks many of which are permanently lost. The zebrafish research community desperately needed a centralized site to preserve and keep track of these stocks and to facilitate their distribution to researchers, thus supporting and promoting research opportunities while preventing duplication of effort.

The [Zebrafish International Resource Center (ZIRC)](http://zirc-www.uoregon.edu/home/stckctr.php) is a facility to maintain wild-type and mutant stocks of zebrafish and makes these stocks widely available to the international research community. The Resource Center reduces the requirement of individual laboratories to maintain stocks they are unable to study, it can provide animals at lower cost than individual laboratories, and most importantly, it can ensure the highest possible levels of quality and uniformity.

ZIRC’s mission is to provide a central repository for wild-type and mutant strains of zebrafish (*Danio rerio*) and for materials and information about zebrafish research. Materials and zebrafish strains are distributed to the research community. Pathology services are provided for diseased fish. Standards and procedures for maintaining healthy strains of zebrafish are being developed and a manual, *Diseases of Zebrafish in Research Facilities*, for prevention, diagnosis, and treatment of diseases affecting zebrafish, is available.

The Resource Center has three main functions:

1. It maintains and makes available to the research community wild-type and mutant zebrafish stocks, frozen sperm, and reagents. It organizes genetic markers and maintains the genetic map. Strains of wild-type fish and lines carrying mutations and transgenes are accepted from the research community, maintained, and distributed upon request. Antibodies, gene probes, and other markers to analyze wild-type and mutant stocks are received, stored, and distributed.
2. The Resource Center distributes information from sister organization, [Zebrafish Information Network’s (ZFIN)](http://zfin.org/). ZFIN is an online database of information about zebrafish genetics, genomics, and development, accessible via the Internet. The center publishes a manual for the laboratory use of zebrafish, facilitates communication among zebrafish researchers, and hosts visits from researchers to work with stocks or learn techniques to identify and maintain mutants.
3. The Resource Center develops methods to improve zebrafish health. It establishes standards and procedures for generating and maintaining healthier more vigorous strains, characterizes endemic diseases, develops methods for disease control and treatment, and publishes a manual of procedures for preventing, diagnosing, and treating zebrafish diseases. The Resource Center maintains Diseases of Zebrafish in Research Facilities that describes diseases of importance to laboratory zebrafish culture. Diseased fish and tissue samples may be sent to the Resource Center for pathology analysis.

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