Expanded Support for Genotypes and Phenotypes

Mutants, transgenic fish and phenotypes in ZFIN are now more complete and informative.

A major change is the addition of genotype pages to ZFIN. Previously, ZFIN used locus pages that were limited to transgenics and single-locus homozygous mutants. Now, single and double mutants, homozygotes, hetero-zygotes and transgenics are all integrated within the genotype framework. Genotype pages show detailed information on alleles, phenotypes, genetic background, zygosity, mutation type and available fish lines. Transgenic genotypes are linked to new Construct pages that provide construct details and associated fish lines. A consistent and informative system for naming genotypes has been developed in consultation with the Zebrafish Nomenclature Committee.

Phenotypes are now tightly integrated into many parts of ZFIN. Phenotypes are shown on gene pages, genotype pages and Genes/Markers/Clones search results. Anatomy pages link directly to mutant and transgenic genotypes with related phenotypes. Gene pages (right) contain links to all associated genotypes and phenotypes.

The most comprehensive way to find genotypes and phenotypes is with the Mutants / Transgenics search page. Here you can search by gene, affected anatomy, chromosome and mutation type. For a quick search of the entire ZFIN database, you can use Site Search to find alleles and phenotypes of interest.

ZFIN curators are now capturing detailed phenotype data from figures in current publications. Phenotype annotations employ structured vocabularies (ontologies) for anatomy, biological processes, and phenotypic characters, promoting consistency and easing comparison with phenotypes in other species. From gene or genotype pages, click "phenotype figure" links to view phenotype figures and annotations. Below are curated phenotypes for a *celsr2* genotype.

Genotypes and Phenotypes

(continued from pg. 1)

Several thousand mutant alleles and hundreds of images and brief submitter-provided descriptions have been catalogued in ZFIN over the past 12 years. These data are available on special phenotype figure pages (below), with links to genotype information and ZFIN anatomy pages. Citations and publications for these mutants and images can be found on related genotype pages or by clicking a phenotype figure image.

We are pleased to offer annotation tools to laboratories that are generating phenotype data.

For more information, please contact us at zfinadmn@zfin.org.
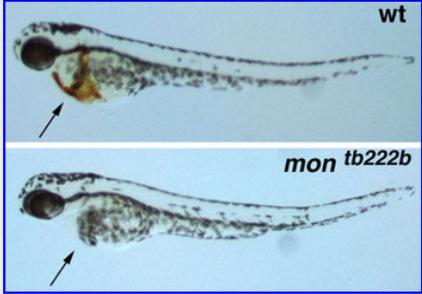
At the recent meeting of zebrafish investigators, several people discussed the need for updates and additions to *The Zebrafish Book*. I am happy to work on this. If you have protocols you would like included, or suggestions for protocols that are missing, please send them to me directly.

In the mean time, we recently completed a few updates to the book and will have the new edition available online and in hard copy fairly soon. Thank you for your support.

Monte Westerfield (monte@uoneuro.uoregon.edu)

ZFIN Home Page Gets Make-Over!

ZFIN is pleased to announce our new home-page. Community input and page usage statistics have been carefully analyzed to make it easier to access all your favorite ZFIN and ZIRC resources. Home-page changes include:

1. a tabbed navigation bar on all ZFIN pages for easier traversal of ZFIN and ZIRC pages
2. more prominent links to ZIRC
3. expanded genomic resource links
4. a news section

In an effort to further integrate zebrafish genome resources, ZFIN has added links to the **Ensembl database.** From ZFIN gene pages, users can access the corresponding Ensembl gene report pages via a link found under the 'Other Gene/Marker Pages' section which also includes links to EntrezGene and Vega. Ensembl gene report pages have reciprocal links to ZFIN gene pages. Links between ZFIN gene pages and Ensembl gene report pages exist only where there is an unambiguous one to one relationship.

ZIRC Unveils New Home And Shopping Pages

The **Zebrafish International Resource Center (ZIRC)** staff is pleased to introduce its new home page and shopping pages: http://zebrafish.org

Over the past 2 years, we worked to design and develop a site that would better achieve our mission to distribute zebrafish resources and services to the community. We received tremendous help from our colleagues at ZFIN, and we continue to cross-link our site extensively to the ZFIN database. This will enable you to do research on ZFIN and order hands-on resources from ZIRC.

Here we introduce some of the key features of our new Home Page:
1. New navigation bar for ZIRC Resources and Health Services
2. A "shopping cart"; select and request multiple items in one order
3. "Your Feedback Welcome" and "Contact Us" links are provided for your questions, comments, and suggestions on how we can improve our services
4. New ZIRC inventory search functions
5. Access to ZFIN data through a ZFIN tab and a ZFIN site search
6. New product pages for Fish Lines, cDNA/ESTs, and Monoclonal Antibodies
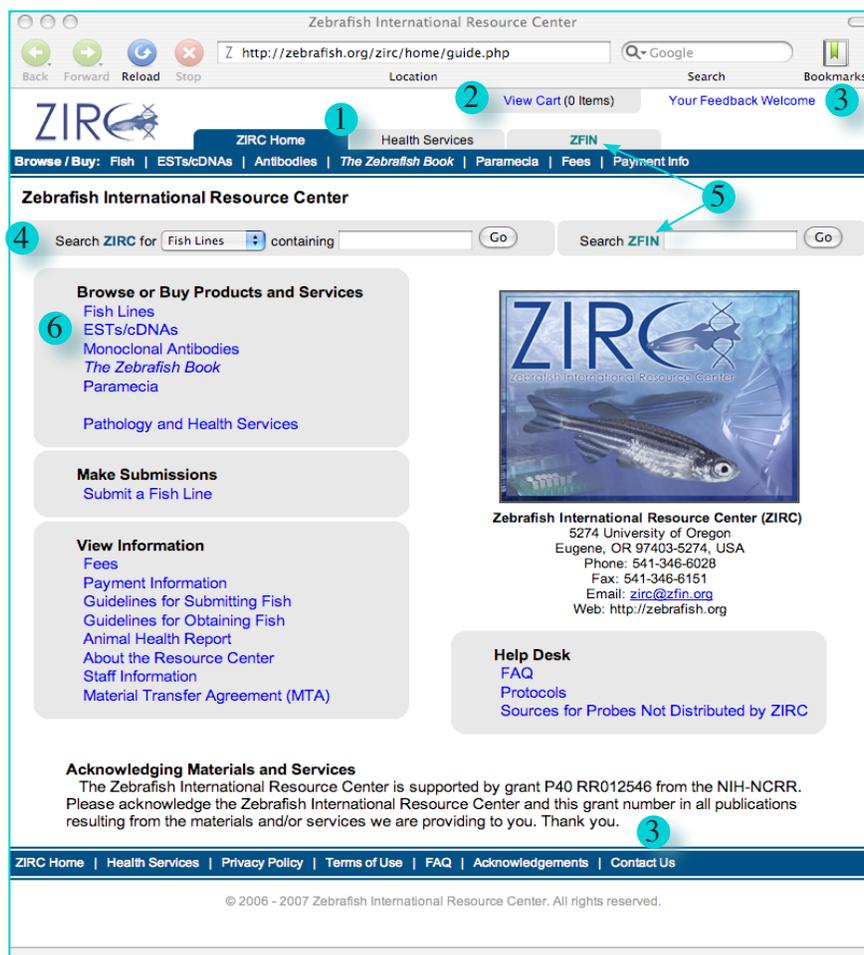
ZIRC Home Page

(continued from page 4)

Here are some new features on our **Product Pages**:

7 Simple and Advanced Search fields on Fish Line, cDNA/EST, and Monoclonal Antibody pages

8 Cross-linked ZIRC inventory and ZFIN pages to facilitate combined research (ZFIN) and resource requests (ZIRC)

9 Improved Checkout/Payment process

10 A Thank You page and a confirmation email that acknowledges the receipt of your request(s) at ZIRC
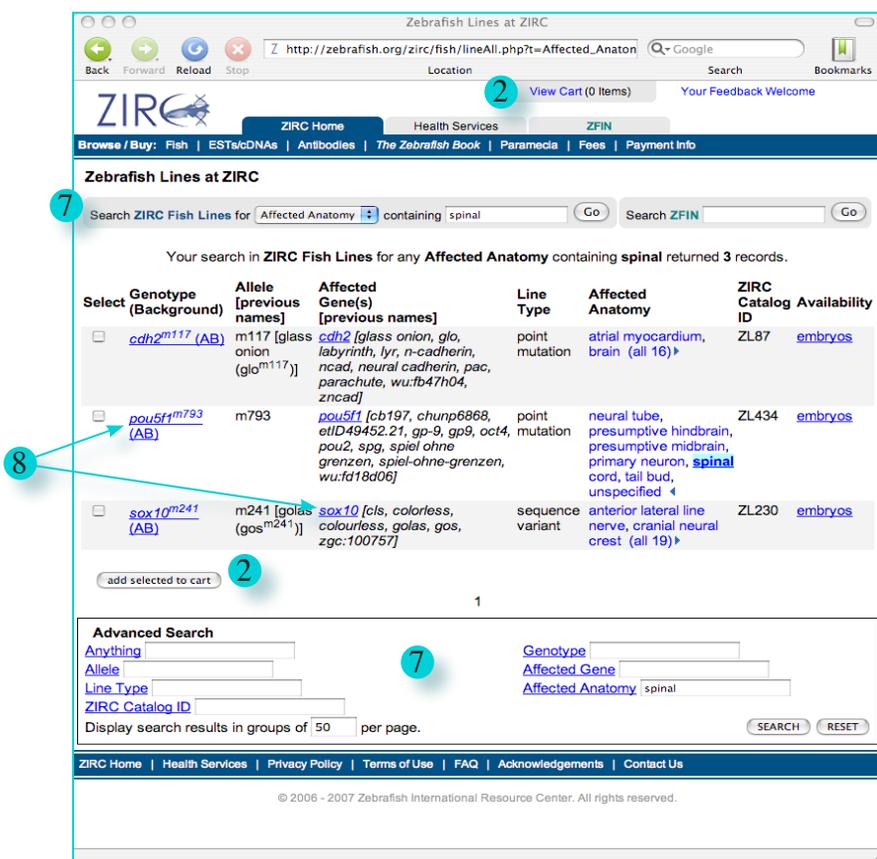
Example: The ZIRC Fish Line page. EST/cDNA and Monoclonal Antibody pages are similar in layout and search functions.

7 With the simple Search function at the top of the page, you can select one of several search categories from the pull down menu and enter search terms in the field.

In the Advanced Search at the bottom of the page, you can use multiple search categories simultaneously to further refine your search.

9 A simple **Checkout** procedure to place orders at ZIRC:

1. Click the Checkout button in the shopping cart
2. Sign in
3. Accept Material Transfer Agreement
4. Enter Shipping, Billing, and PI information
5. Confirm order
6. Enter Payment Method

10 A printable Thank You page is then displayed and an e-mail sent confirming ZIRC's receipt of the order