Xiphophorus maculatus, Papaloapan Platy

Female (DrSp Iy, OT)

Male (Iy Arsp, TT)

Strain code: Pp

Phenotypes scored: Dorsal fin color, dorsal red (Dr); spotted side (Sp); eye color, iris yellow (Iy); red spot over the anal fin (Arsp); tail spot patterns: one-spot (O) and twin-spot (T).

Introduction:

This strain originated from the Rio Papaloapan drainage in Veracruz, Mexico. A Y-linked gene causes the expression of a red spot over the anal fin (Arsp) in adult males; this is also known as ruby throat. Genes encoding additional pigment patterns mark two X-chromosomes segregating in this population. One X-chromosome carries an allele at a gene that encodes a yellow iris (Iy). The other X-chromosome carries two linked pigment genes, one affecting dorsal fin color, dorsal red (Dr), and the other spotting on the flank (Sp). This stock also has two alleles segregating at a gene for an autosomal tail-spot pattern, the allelic designation reflecting the number of spots expressed: one spot (O) and twin spot (T).

Sex determination / sexing:

Chromosomal sex determination is XX / XY. Fish are sexed at 1.5 to two-months of age, and should be monitored closely for about a month after sexing, to confirm results. They become sexually mature at about 4 months of age.

Scoring:

The above phenotypes are scored when the fish reach maturity, at about 4 months of age; this approximately coincides with the timing to set up matings. All phenotypic color patterns in younger fish should always be scored using a dissecting scope.

Maintenance:

This stock is maintained with reciprocal crosses between fish of two different pedigrees. Ideally, two to three matings are set up each generation to maintain the stock. All three X-chromosomes should be present in each mating. The mating scheme currently followed at the Stock Center involves a spotted, iris yellow female with a non-spotted, ruby throat, iris yellow male:

$X^{Iy}X^{DrSp}$ OT x $X^{Iy}Y^{Arsp}$ TT

Or

$X^{Iy}X^{DrSp}$ TT x $X^{Iy}Y^{Arsp}$ OT

In each mating, one parent is heterozygous for one-spot (OT), and homozygous for twin-spot (TT). Segregation of these alleles produces 1/2 TT and 1/2 OT offspring. The female offspring will be either $X^{Iy}X^{DrSp}$, or $X^{Iy}X^{Iy}$. Only the spotted females (which are also iris-yellow) are used in subsequent matings. The male offspring will be either $X^{DrSp}Y^{Arsp}$ or $X^{Iy}Y^{Arsp}$. Only non-spotted, iris-yellow males are used in matings. The iris of fish with the Iy genotype turns red in older males.

Stock source:

Prof. Klaus Kallman, the New York Aquarium, 4/15/93.