

*Xiphophorus nezahualcoyotl*, Ocampo



Female (+)



Male (ML)



Female (M)



Male (+OL)

Strain code: Ocampo

Phenotypes scored: Macromelanophore patterns and associations: X-linked macro-pattern (X-M), Y-linked macromelanophore-pattern associated with late maturation (Y-ML), Y-linked wild type allele at the macromelanophore gene linked to orange sword color and late maturation (Y-+OL), and X-linked wild type (X-+). Both X-chromosomes are associated with early maturation (S).

Introduction:

The Ocampo stock originated from a tributary of the Rio Tamesi west of Ocampo, Tamaulipas, Mexico, and was brought to the Stock Center in 1984. There are genes in this stock that control maturation rates (P-factors), linked to the X and Y-chromosomes. An allele for early maturation and small size (S) is found on all X-chromosomes in this stock. All Y-chromosomes carry a P-factor for late maturation and large size (L). The males carrying the Y-linked wild-type allele also carry a single allele at a second Y-linked gene for orange sword color. The Y-chromosome that carries the + allele at the

macromelanophore locus also possess a factor that causes orange sword coloration. Y-chromosomes with the factor for early maturation occur in the natural population, but are not represented in this stock.

Sex determination / sexing:

Females are XX; males are XY. Ocampo fish can be sexed at 3 months of age. Males will reach sexual maturity at 4 to 6 months of age. Females are sexually mature once the gravidity spot is apparent, at about 4 months of age.

Scoring:

Several phenotypes are scored in the Ocampo stock. Some of the X and Y chromosomes carry a dominant allele for a macromelanophore pattern (M), as well. Both M and + alleles are maintained by mating heterozygous M (M+) fish with wild-type fish (++), resulting in a 1:1 ratio of wild-type to spotted offspring. The Y+OL chromosome is maintained by mating X-+ Y-+OL males to either ++ or M+ females. Females in this stock may be difficult to score for the M pattern and may not display spotting until after sexual maturation. It is therefore best to score the fish once they are fully mature. Sword color should be scored under the microscope with a black background, as is done when scoring any sword color of any given strain. Males of this stock have been noted to express a pseudogravidity spot (pgs).

Stock Maintenance:

At least six matings are set up for each generation as reciprocal crosses. Special attention should be given to preserving the wild-type X-chromosome. At least two matings should be set up to produce wild-type males and females. The following mating schemes should ensure these objectives:

$X^+X^+ (x) X^+Y^{+OL} \rightarrow 2 \text{ matings}$

$X^+X^+ (x) X^+Y^{M+L} \rightarrow 2 \text{ matings}$

$X^M X^+ (x) X^+Y^{+OL} \rightarrow 2 \text{ matings.}$

Matings with  $X^M$  males may also be used, as long as the Y chromosome with the M-allele is preserved.

Stock source:

Prof. Klaus Kallman, the New York Aquarium, on 9/10/92, 10/21/92, and 6/11/93.