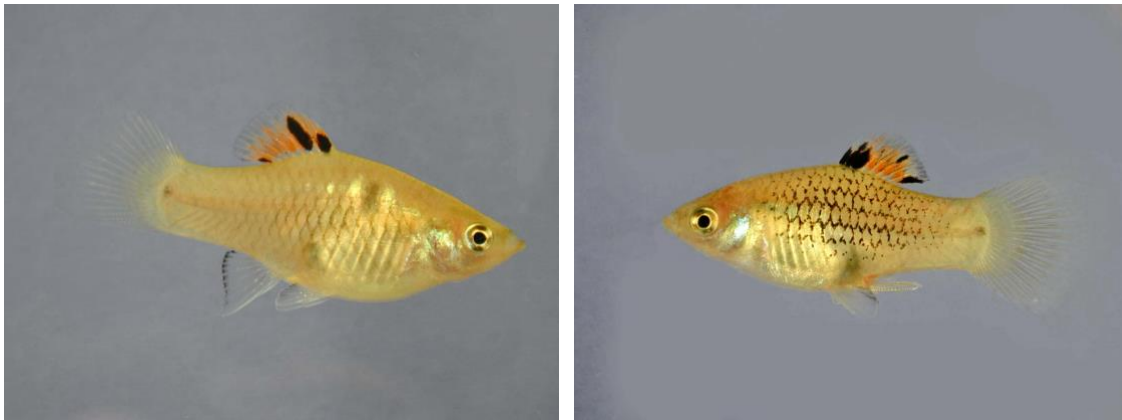


*Xiphophorus maculatus*, Jp163A



Female

Male

Strain code: Jp163A

Phenotypes scored: Dorsal red (Dr), spotted dorsal (Sd), anal red (Ar), striped side (Sr), shoulder spot (ss), and dot (D).

Introduction:

Ancestors of this stock were collected from the Rio Jamapa, Veracruz, Mexico in 1939 by Dr. James W. Atz. This line was established in the early Stock Center in New York with offspring from a single female from that collection. After nine generations, this stock was split into two lines, which have been maintained separately by inbreeding since that time (Kallman, 1968). These two stocks are designated Jp163A and Jp163B. The Jp163A stock at the Stock Center is currently in the 101<sup>st</sup> generation of inbreeding. This stock is also used in the production of four (or more) hybrids.

Six phenotypic traits are maintained in this stock: four sex-linked traits, and two autosomal traits (Gordon, 1953; Kallman, 1970). The X-chromosome in this stock carries two linked pigment pattern genes: one that produces a red dorsal fin (Dr), and a second that encodes the expression of macromelanophores in the dorsal fin (Sd). Two additional pattern genes are linked on the Y-chromosome: stripe-sided (Sr) and a gene that produces a red anal fin (Ar). The shoulder spot (ss) develops on the anterior, dorsal part of the flank. The shoulder spot trait is determined by two gene loci (lets call them arbitrarily m and n): one sex linked and the other one autosomal. The trait is expressed when the fish is homozygous recessive at both loci. In Jp163A and B the genotype can be formally expressed as follows:

female X-m X-m nn                      male X-m Y-M nn

Because Jp163 is homozygous recessive for n, one cannot demonstrate its presence. But Belize fish introduced the N allele and the N locus could be demonstrated. This strain is also homozygous for dot (D), a spot displayed on the tail.

Two P-alleles exist in this stock. P-1, the earliest p-gene documented in *X. maculatus*, is linked to the X-chromosome. P-2, the second earliest, is linked to the Y-chromosome.

Sex determination / sexing:

Sex determination in this stock is XX / XY (Gordon, 1954). Fish are sexed at one to one and a half months of age, and become sexually mature at about 4 months of age.

Scoring:

Fish are scored for the traits dorsal-red, spotted-dorsal, stripe-sided, anal-red, shoulder spot, and dot. In this stock the shoulder spot is expressed in females only, but a gene linked to Sr suppresses the expression of shoulder spot in males.

Maintenance:

This stock is maintained with reciprocal crosses between the different lines. The offspring of each mating are assigned a pedigree letter based on order of production among all crosses established within that generation. For example, the first mating to produce a brood in the 91st generation is assigned the pedigree A, along with the generation number (e.g., Jp163A<sup>91</sup>(A)), the second mating to produce a brood is assigned the pedigree B (e.g., Jp163A<sup>91</sup>(B)), and so on. The number of matings set up each generation depends on the demand for this stock, e.g., six or more matings. A sufficient number of matings must be set up to produce extra fish for line maintenance and other stocks, such as, YSp, SpSr, JpYIrBr, JpYIr, JpYBr, and hybrids.

Stock source:

Prof. K. Kallman, the New York Aquarium, 9/10/92.