

Xiphophorus signum

Female



Male



Strain code: Signum

Phenotypes scored: Grave spot (Gr)

Introduction:

The original strain of *X. signum* was collected in the Rio Chajmaic, Alta Verapaz, Guatemala, in 1963. The 'Ch' strain survived for more than 11 generations of inbreeding, but usually exhibited severely aberrant sex ratios (the first seven matings at the New York Aquarium produced 22 males and 205 females, Kallman and Atz, 1966) and was eventually lost. The current *X. signum* stock was received from Dr. J. H. Schroder, Munich, on 9/28/93, but was derived from individuals of uncertain history. These fish were probably obtained from aquarist Manfred Meyer, and were probably unrelated to the earlier strain.

This strain is a member of the southern swordtail clade and was described as a subspecies of *X. helleri* (Rosen and Kallman, 1969; Morizot and Siciliano, 1982). Rosen (1969) elevated *signum* to specific status, with the most notable character being the presence of a grave spot, a micromelanophore pattern in the caudal fins of males and females. *X. signum* is not known to have ever successfully hybridized, i.e., produced offspring, with any other *Xiphophorus* species (Kallman, pers. comm.).

Sexing:

X. signum fish are sexed at 4 to 6 months of age. It is important that sex ratios be determined as early as possible, in case of an extreme bias in sex ratios, and additional matings are needed to ensure adequate production of the next generation. Always retain at least one tank of males and one tank of females from the previous generation until it is positively established that males and females exist in the current generation.

Scoring:

The grave pattern (Gr) of micromelanophore spots typically involves the anterior portions of the first through fifth ventral bifurcated caudal fin rays and first appears in fish

two to three weeks old (Kallman and Atz, 1966; Rauchenberger et al., 1990). This pattern is present in all *X. signum* fish and thus need not be scored individually, except to note obvious deviations from the norm in expression. The grave spot becomes part of the dorsal black margin of the sword in males, which makes the *X. signum* sword appear to have a very black anterior margin. The presence of the grave spot in females led Kallman and Atz (1966) to suggest that in *X. signum*, expression of the grave pattern has become independent of androgenic hormonal control.

Maintenance:

X. signum is maintained as an inbred strain. Four to six reciprocal crosses are set up between offspring from at least two different pedigrees when available to establish the subsequent generation.

Stock source:

Dr. J. H. Schroder, Munich, Germany, 9/28/93.