

Tetraploid Induction in the Yellowtail Tetra *Astyanax altiparanae*

Authors : Nivaldo Ferreira do Nascimento, Matheus Pereira-Santos, Nycolas Levy-Pereira, José Augusto Senhorini, George Shigueki Yasui, Laura Satiko Okada Nakaghi

Abstract : Tetraploid individuals, which could produce diploid gametes, can be used for production of 100% triploid fish. Therefore, the aim of this study was to develop a tetraploidization protocol for *A. altiparanae*. We tested the effect of heat shock (40 °C; 2 min) at 16, 18, 20, 22, 24 and 26 minutes post fertilization (mpf). Untreated eggs were used as control. After hatching, ploidy status of the larvae was checked by flow cytometry. No difference were observed for the hatching rate between all treatments ($P = 0.5974$). However, we observed an increase in the larval abnormality in the heat shock treatments, in special at 22 ($82.17 \pm 6.66\%$) 24 ($78.31 \pm 7.28\%$) and 26 mpf ($79.01 \pm 7.85\%$) in comparison with the control group ($12.87 \pm 4.46\%$). No tetraploid was observed at 16 and 18 mpf. The higher number of tetraploid individuals (52/55) was observed at 26 mpf. Our results showed that high percentages of tetraploids are obtained by heat shock (40°C; 2min) at 26 mpf, which could enable the mass production of triploid individuals in *A. altiparanae*.

Keywords : chromosome manipulation, polyploidy, flow cytometry, tetraploidization

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