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Performance of human immunostimulating agents in the improvement of fish cytogenetic preparations

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ABSTRACT. Inoculation with bacterial or fungal antigens that stimulate cell proliferation has been widely used to obtain metaphases for cytogenetic studies of fish. We evaluated the potential of new pharmaceutical compounds as mitogenic agents in fish, testing the efficacy of Aminovac® (mixed antigens and epsilon-acetamidocaproic acid), Broncho-Vaxom® (bacterial lysate) and Estimoral® (bacterial lysate) to increase the mitotic index in fingerlings of the Neotropical fish *Prochilodus brevis* (Prochilodontidae) and *Hoplias malabaricus* (Erythrinidae), which were obtained from an aquaculture facility. The animals were treated with intramuscular or intraperitoneal injections of 1 mL/50 g body weight of each compound. After 24 h, cytogenetic analyses were performed. All immunostimulants tested significantly stimulated cell division, although Aminovac® proved to be the most efficient, leading to a 5-fold increase in the number of metaphase cells compared to the control group and to a 2-fold increase compared

to conventional yeast inoculation. This compound facilitates fish cytogenetics analyses as it stimulates the proliferation of defense cells and reduces loss of samples. It will be especially useful for the study of specimens that either have a high commercial value or are fragile, small and/or rare.

Key words: Fish cytogenetics; Mitotic stimulation; Broncho-Vaxom; Estimoral; Aminovac

