

Exploring potential synergistic effects between dietary adenosine and inosine monophosphate on growth performance and acute stress-induced immune responses of hybrid striped bass *Morone chrysops* x *Morone saxatilis*

ABSTRACT

Two experiments were carried out to evaluate the effects of dietary adenosine monophosphate (AMP) and inosine monophosphate (IMP) on growth performance and acute stress-induced immune response of hybrid striped bass (HSB). Nine isonitrogenous and isolipidic diets were prepared including a basal diet and eight treatments consisting of singular or combined additions of 0.5% AMP and 0.5% IMP, and combinations of 0.25% AMP and 0.25% IMP from each of two suppliers, Sigma-Aldrich and Chem-Impex. The first experiment included two 9-weeks feeding trials in which triplicate groups of HSB (~9.7 g) were fed the experimental diets. Dietary 0.5% IMP (C-Impex) showed significantly higher stimulation index of B-lymphocyte proliferation compared with other dietary treatments. However, no significant synergistic effects between AMP and IMP supplementation were observed in production performance. In a subsequent experiment, HSB (~59.3 g) were fed the diets described previously for 2 weeks and subjected to a standardized acute stress challenge. Fish fed some of the dietary nucleotide treatments had significant enhancement of innate immunity at 0.5 and 12 hr poststress challenge compared with those fed the basal diet. Dietary 0.5% AMP (Chem-Impex) provided the best capability for enhancing innate immunity during poststress and resistance to stress-induced immunosuppression.