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ABSTRACT

Taurine has been widely researched as a growth-promoting additive or as an antioxidant in aquatic animals because of its multiple functions, however, few studies have explored its effects on crustacean in spite of the occurrence of serious diseases. We studied the effects of taurine supplementation on the growth, non-specific immunity, anti-oxidative properties and gut immunity of the Chinese mitten crab *Eriocheir sinensis*. Healthy crabs (8.0 ± 0.5 g) were fed diets supplemented with taurine at 0 % (control), 0.2 %, 0.4 %, 0.8 %, and 1.6 % for 65 days. At the end of this 65 days feeding trial, the final weight, weight gain, specific growth rate, and feed conversion ratio were best in crabs fed the 0.4 % taurine diet, followed by that in those fed the 0.8 % taurine diet; the parameters were worst for the control group. Carapace length (CL) and carapace width (CW) were significantly increased in the crab fed the 0.4 % and 0.8 % taurine diet than that of the other three groups. Total haemocyte count (THC) and acid phosphatase (ACP) activity were significantly higher in the crab fed the 0.8 % taurine diet than in those belonging to the other groups, the crabs fed the 0.4 % taurine diet had the highest phenoloxidase (PO), lysozyme (LZM), and alkaline phosphatase (AKP) activities, however, there was no obvious change in their haemocyanin (Hc) content. According to superoxide dismutase (SOD), glutathione Peroxidase (GSH-PX), total anti-oxidant capacity (T-AOC) activities and malondialdehyde (MDA) content，the antioxidant capacity was significantly induced by taurine diet, while was higher in crabs fed