

***In vitro* ASSESSMENT OF ANTAGONISTIC ACTIVITIES OF ISOLATES FROM GILTHEAD SEABREAM (*Sparus aurata*) GASTROINTESTINAL TRACT FED MICROALGAE SUPPLEMENTED DIET**

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The use of probiotics has emerged as a sustainable alternative to antibiotics in the control of infectious diseases, favouring fish health management, growth performance and feed utilisation, among others. On the other hand, microalgae represent an interesting source of nutrients and functional ingredients for aquafeeds. However, their digestibility is often limited by the presence of anti-nutritional factors or absence of appropriate enzymatic activities in the fish gastrointestinal tract (GIT). The aims of the present work were to isolate potential probiotics from the GIT of healthy gilthead seabream (*Sparus aurata*) fed with a diet containing 25 % microalgae and characterize their antagonism against fish pathogens. Altogether, 117 strains were isolated from juvenile seabream (146.8 ± 16.4 g) and firstly screened for hydrolytic enzyme activities (proteolytic, collagenolytic, lipolytic, amylolytic, phytase, tannase and cellulose hydrolysis). Results showed that 48 %, 41 %, 77 % and 30 % of isolates were able to hydrolyse protein, lipids, collagen and starch, respectively. Moreover, 46 %, 8 % and 57 % of isolates exhibited the ability to degrade phytate, tannins and cellulose, respectively. Based on these results, a total of 32 isolates were selected for inhibitory activity against several fish pathogens assessment. Inhibition against *Aeromonas hydrophila* and *Vibrio anguillarum* was detected in 38 % of the isolates, whilst 44 % and 47 % inhibited *Photobacterium damsela* subsp. *damsela* and *P. damsela* subsp. *piscicida*, respectively. Finally, different inhibition abilities were detected in the isolates when tested against *Tenacibaculum* species. Thus, 56 % inhibited *Tenacibaculum maritimum*; 63 % *T. soleae* and 22 % *T. gallaecium*. Overall, results showed that three strains display ability to hydrolyse 4 of the assayed substrates and produce inhibition against 8 fish pathogens, and two strains are capable to hydrolyse 5 substrates and inhibit 8 fish pathogens. Therefore, selected strains show potential characteristics that make them suitable to be considered for further characterization as potential probiotics in gilthead seabream aquaculture and microalgae-supplemented aquafeeds.

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