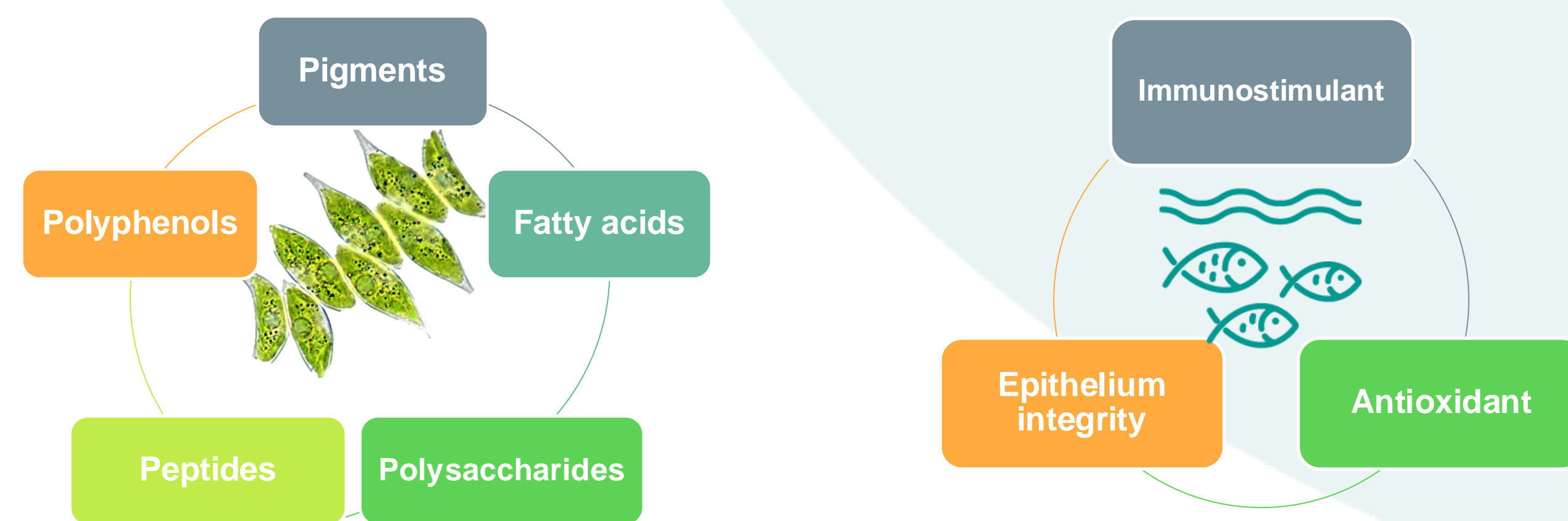


Tetradismus obliquus fractions as modulators of gut health status

INTRODUCTION

Tetradismus obliquus is a fast-growth microalgae and a natural producer of high-value bioactive compounds:

This compounds makes this algae very attractive additive in aquafeeds, due to their properties:



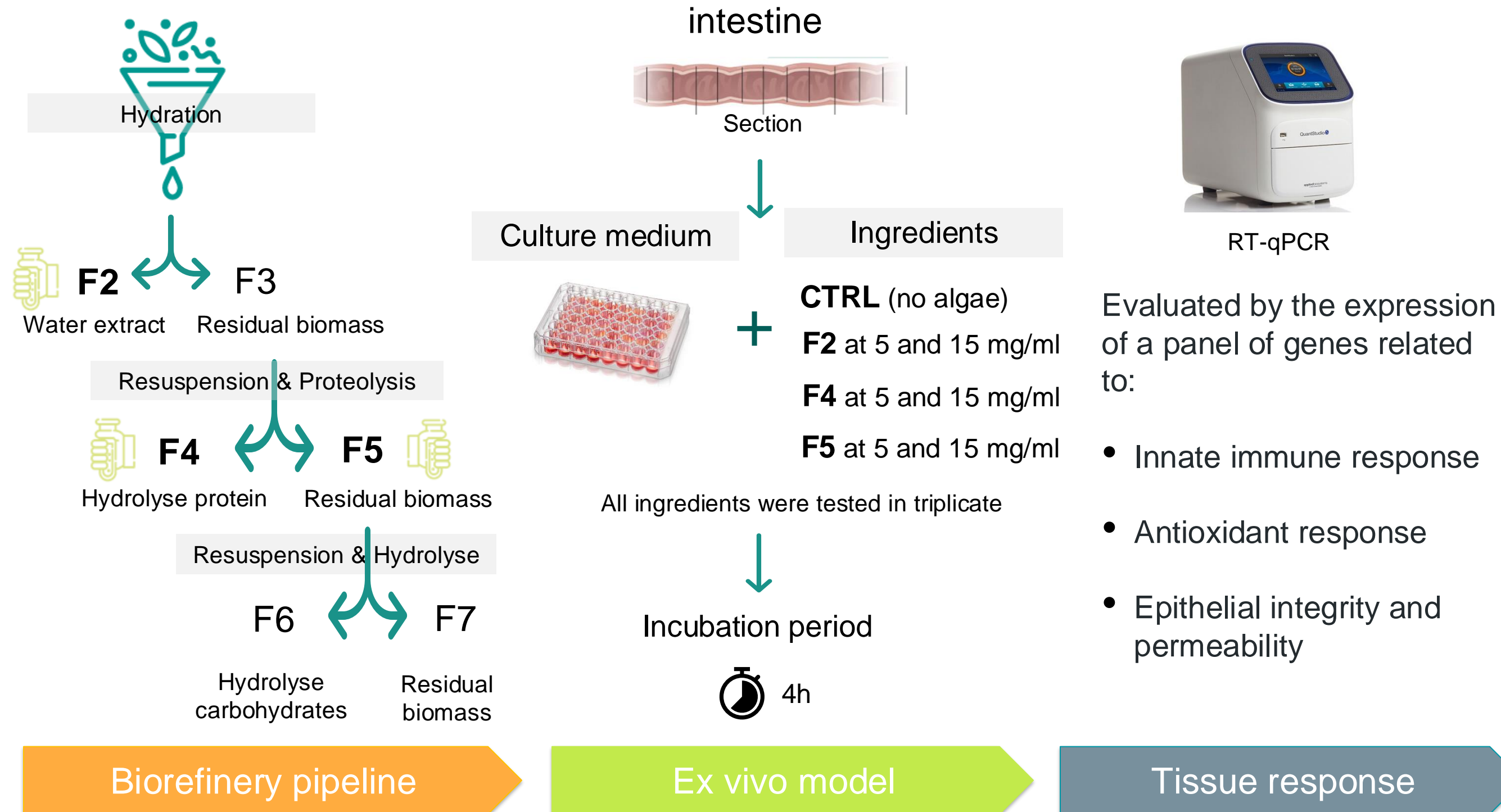
Evaluate the potential of *T. obliquus* (TOBL) fractions as gut health promoters of gilthead seabream (*Sparus aurata*), using an *ex vivo* model

MATERIALS & METHODS

TOBL dry biomass (F1)

Gilthead seabream anterior intestine

Molecular biomarkers



RESULTS & DISCUSSION

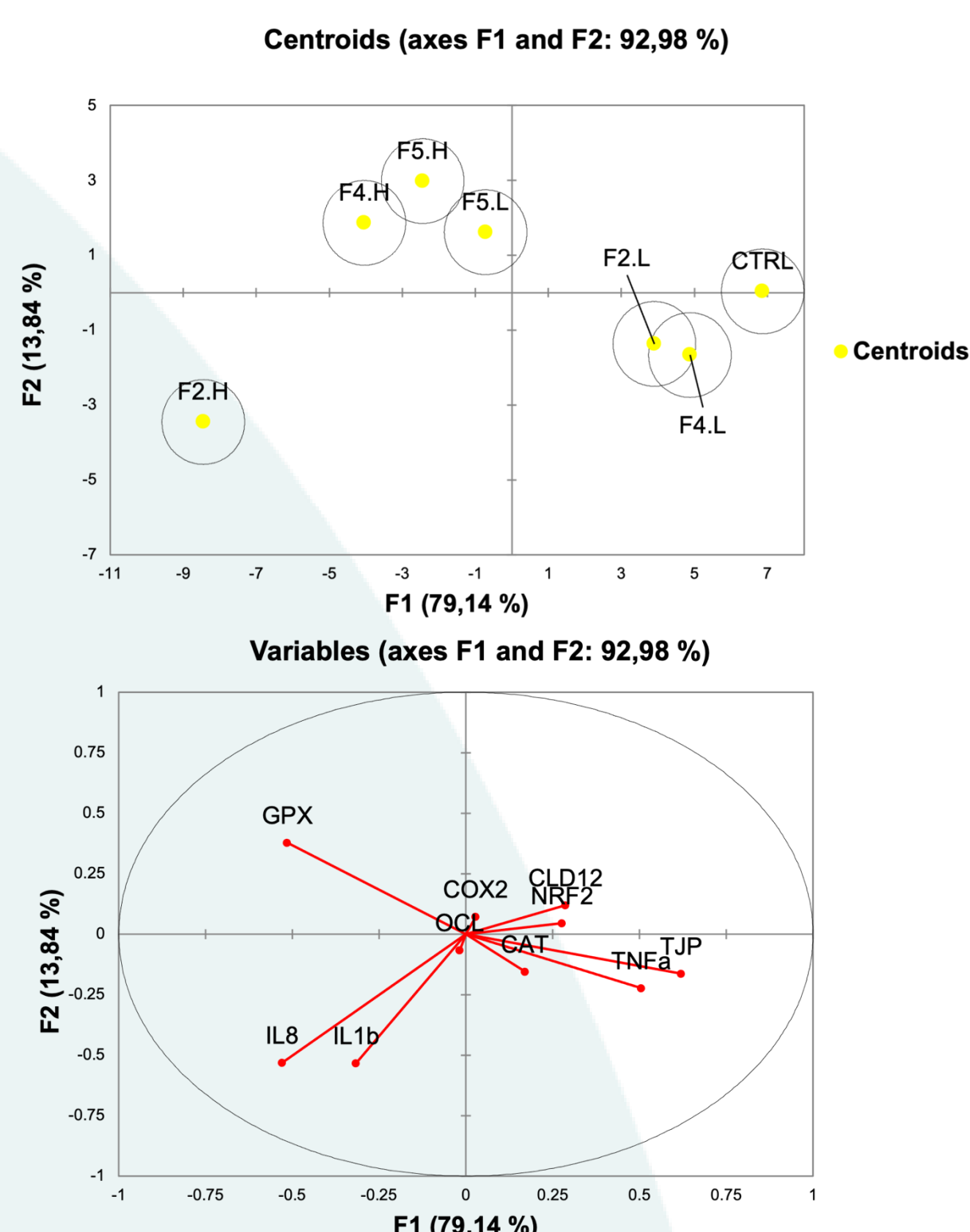


Fig 1. Centroid plot (up), and variable loads (down) of the discriminant analysis applied to the different groups based on the assessed gene panel. Yellow dots indicate group centroids and the Mahalanobis distances between groups (F2.H, F4.H and F5.H) were significantly different between CTRL (Fisher-test, $p < 0.05$)

- Fractions of TOBL showed a differential expression in intestinal tissue in a dose-dependent manner
- The soluble fraction TOBL F2, at higher dose, seems to stimulate the intestinal immune response as evidenced by the up-regulation of cytokines IL1b and IL8
- The tissue antioxidant enzyme GPX was up-regulated in response to a higher dose of TOBL F5, however, no other antioxidant biomarkers were stimulated by this extract

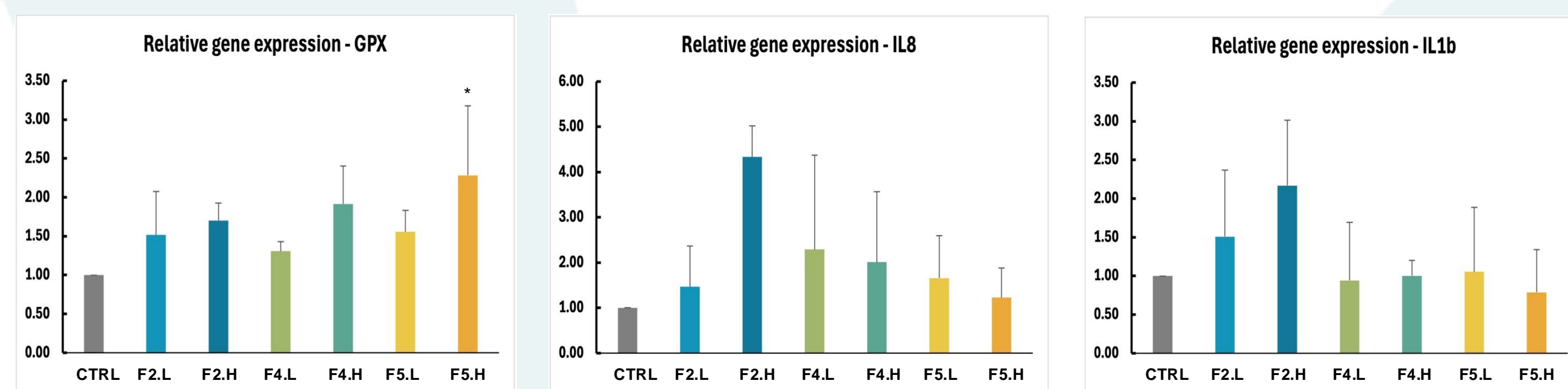


Fig 2. Relative expression of *Glutathione peroxidase* (GPX), *Interleukin 8* (IL8) and *Interleukin 1b* (IL1b) in gilthead seabream intestine incubated with the different ingredients. Values are expressed as mean \pm s.d. Differences between treatments (1-way ANOVA, $p < 0.05$) are marked with **

CONCLUSIONS

Based on the observed response, retrieving the soluble fraction of the first aqueous extraction (F2) could be a cost-effective processing method for *T. obliquus* biomass to be used as a functional ingredient to support fish performance and resilience.

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