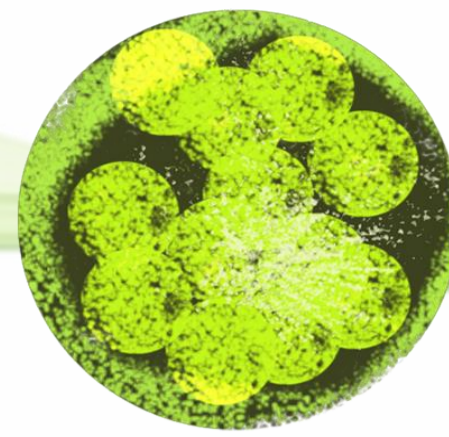


SYNERGISTIC EFFECT OF BIOACTIVE COMPOUNDS EXTRACTED FROM ALGAE ON EUROPEAN SEABASS *Dicentrarchus labrax* IMMUNITY

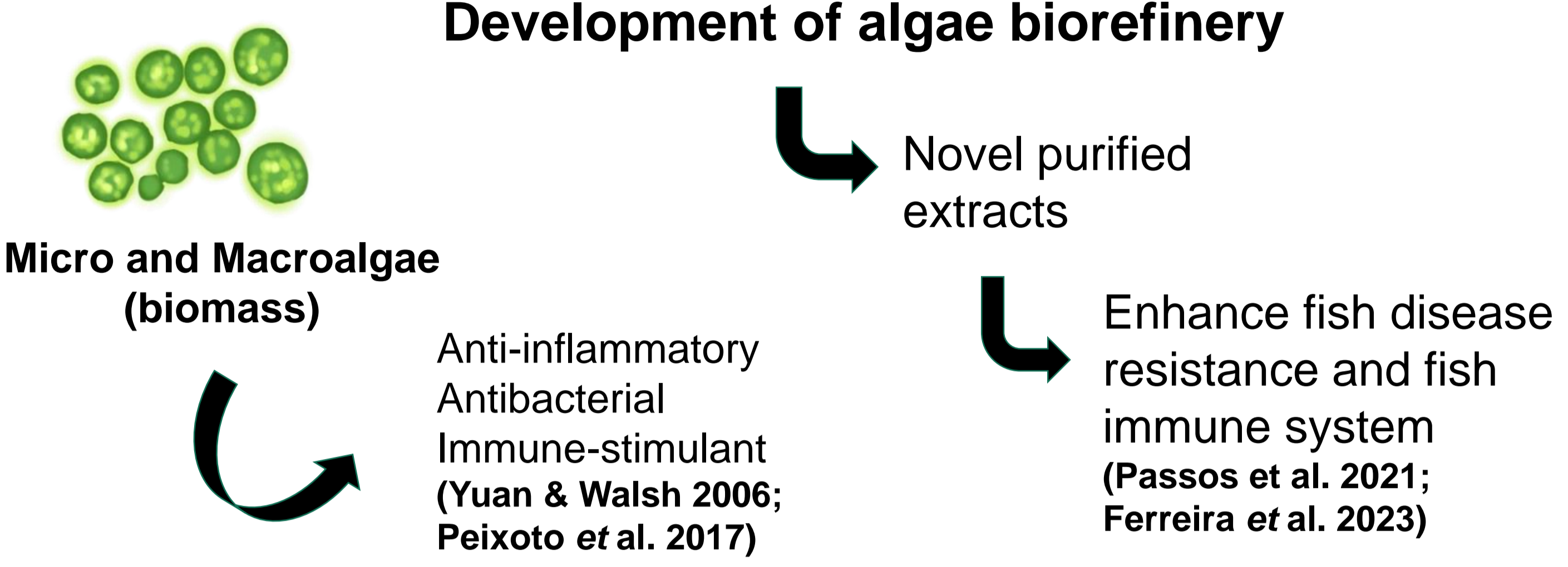
P. Santos^{1,2,4,5}, A. Cunha^{1,2,4}, M. Hinzmann¹, I. Ferreira^{1,2}, L. Ramos-Pinto¹, T. Aires⁵, S. Magalhães⁵, R. Vitorino⁴, L. Conceição³, R. Azeredo^{1,2}, A.T. Gonçalves^{3,4}, B. Costas^{1,2}

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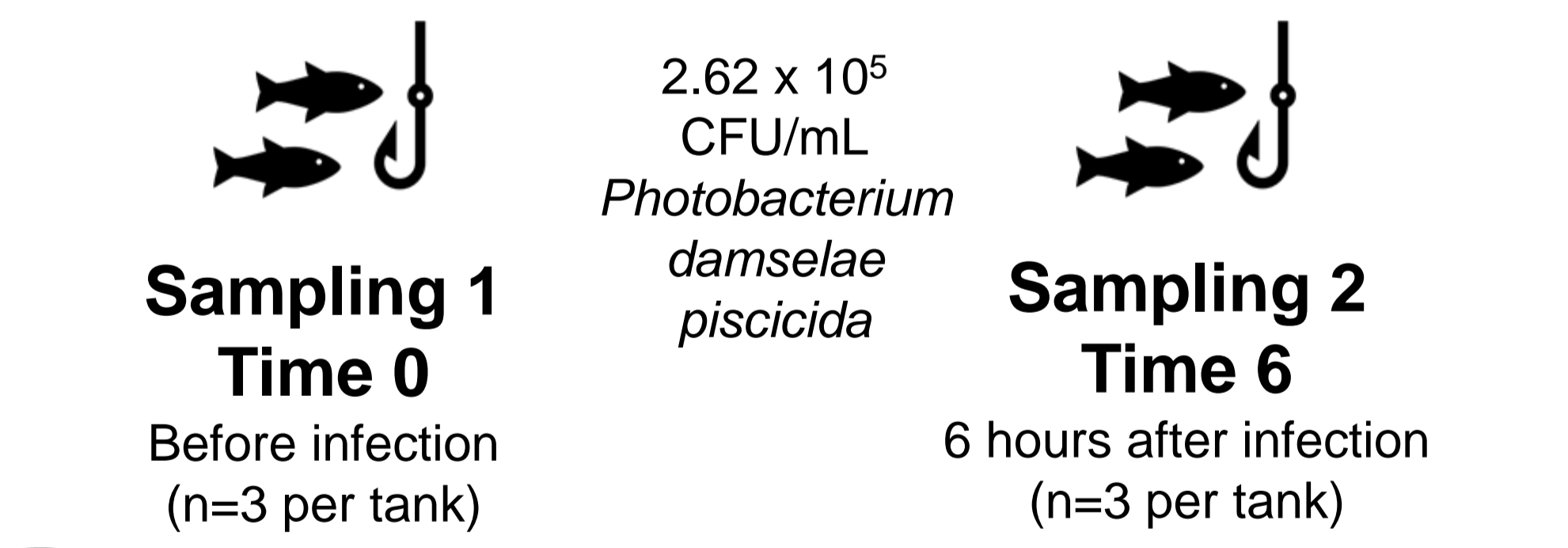
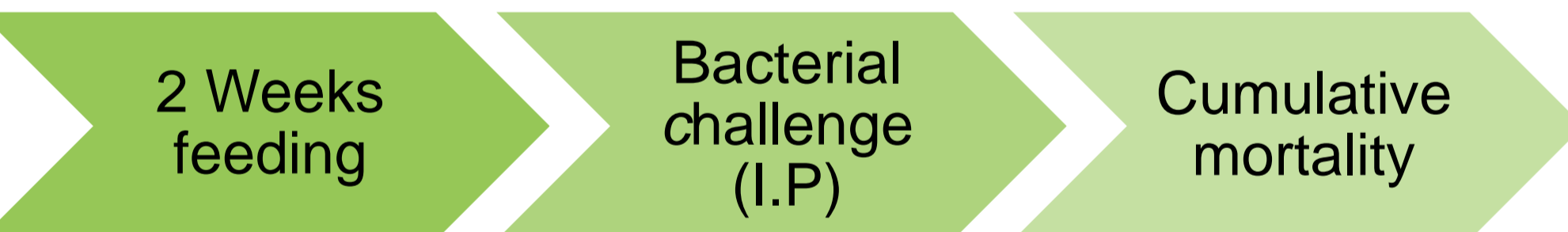
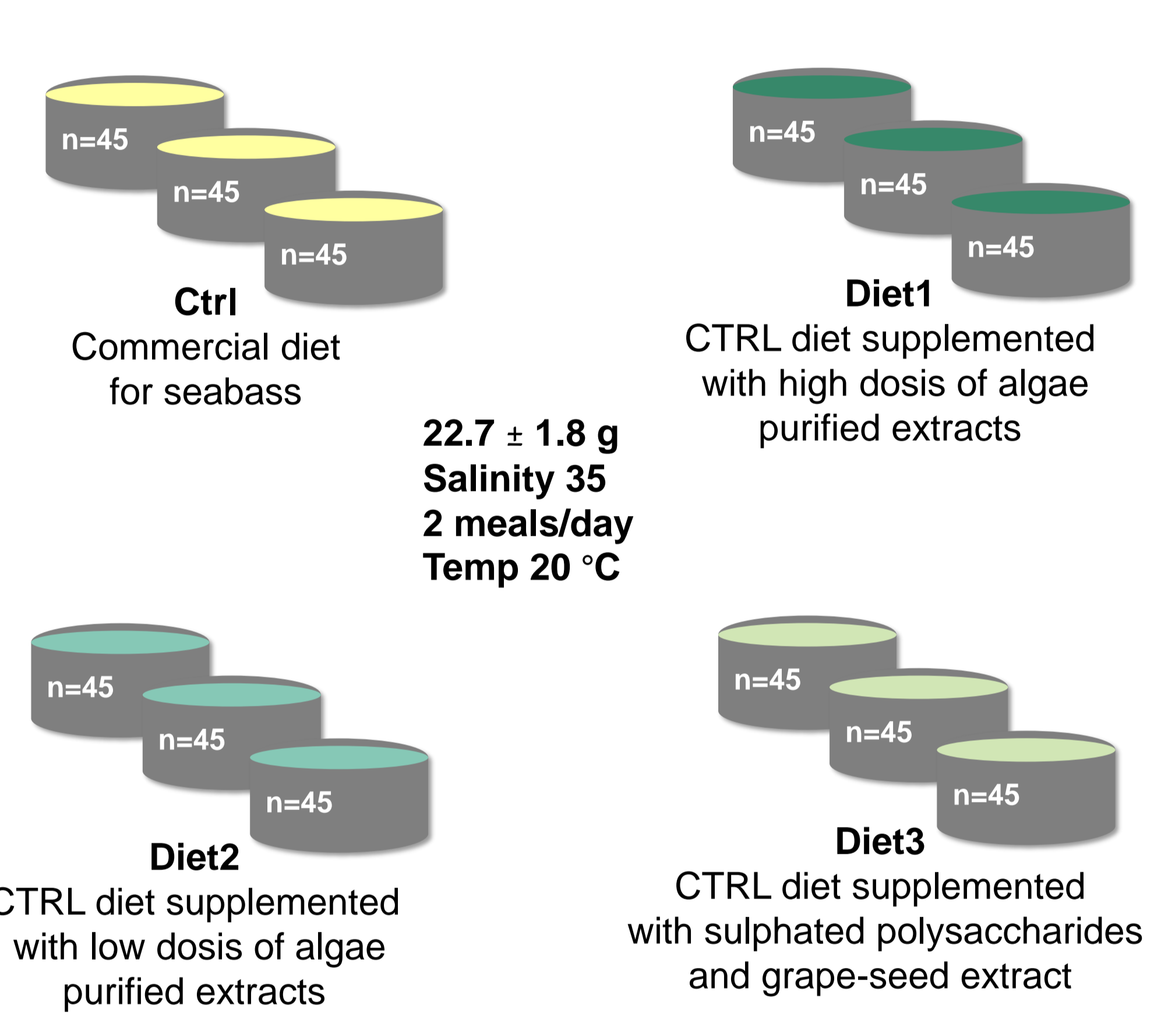
INTRODUCTION

AIM OF STUDY



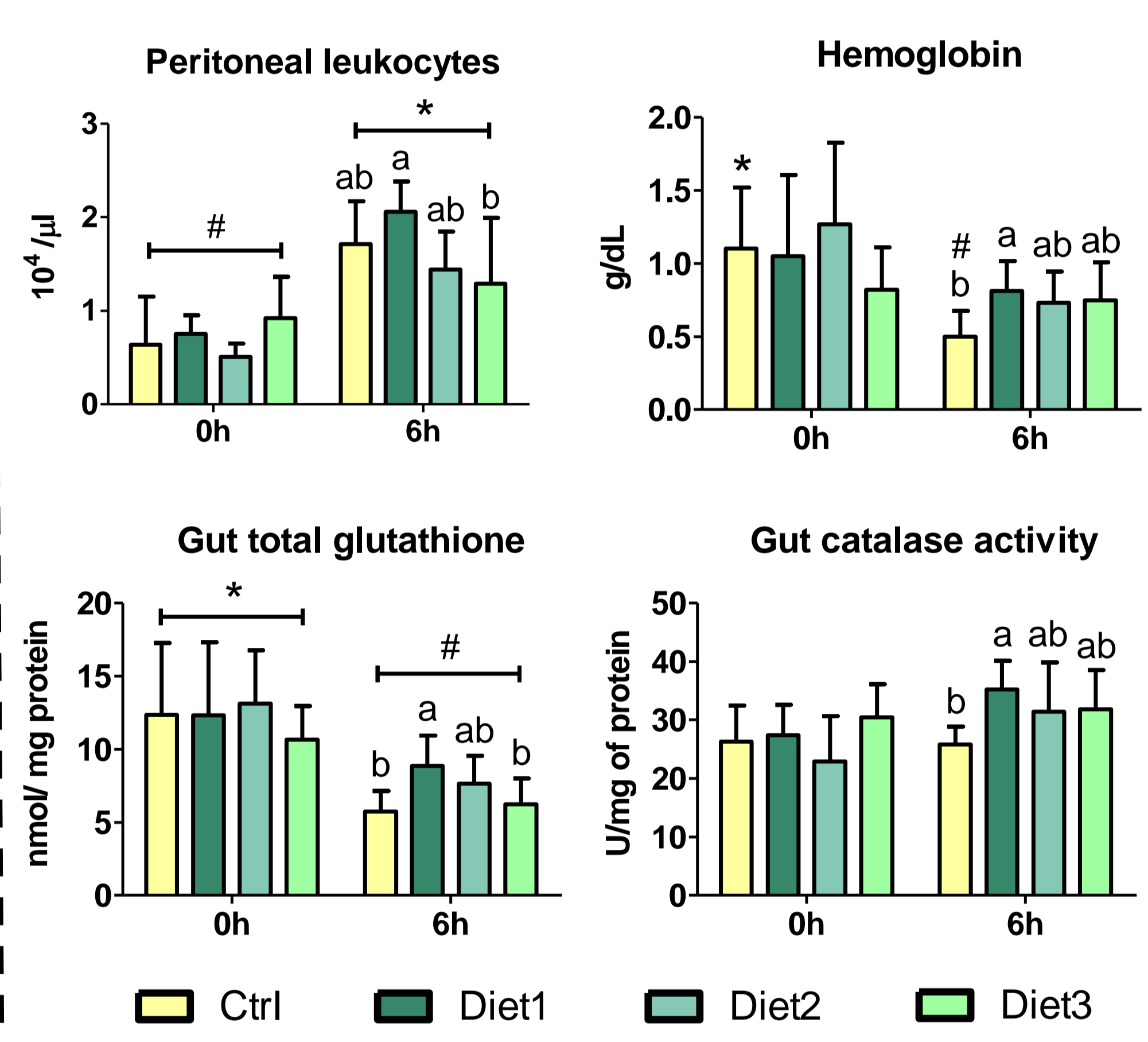
Evaluate innate immune condition and disease resistance of seabass juveniles fed diets containing different combinations of algae derived compounds

MATERIALS AND METHODS



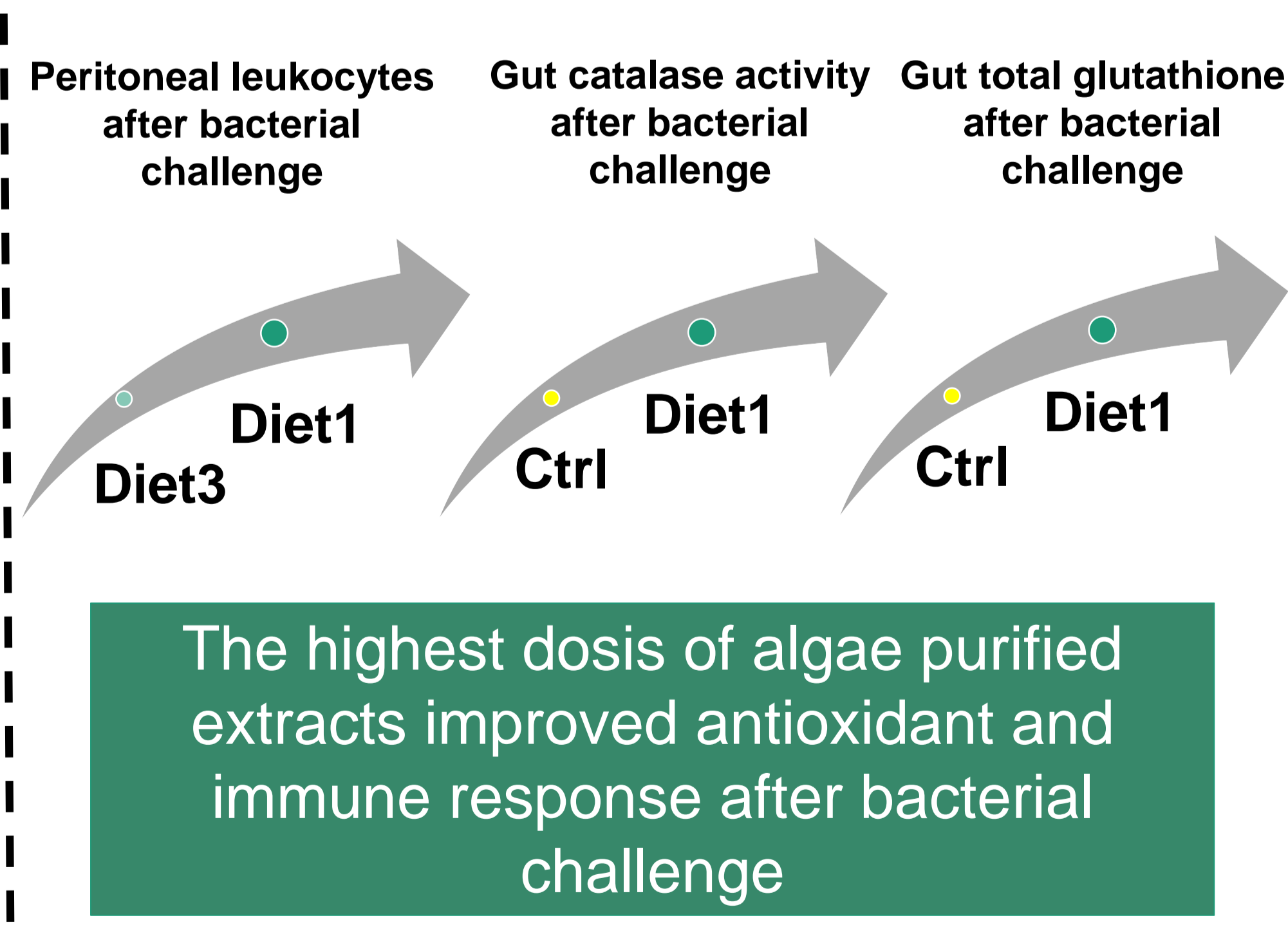
- Hematological profile**
 - Total red blood cells (RBC)
 - Total and differential peripheral leukocytes counts (WBC)
 - Total and differential peritoneal leukocytes counts
 - Hemoglobin
 - Hematocrit
- Liver and Gut Oxidative Stress**
 - Lipid peroxidation
 - Total glutathione
 - Catalase activity
 - Superoxide dismutase activity
- Humoral parameters**
 - Peroxidase activity
 - Lysozyme activity
 - Bactericidal activity
- Head-kidney and gut gene expression**
 - TNF-α
 - IL-8
 - TGF-β
 - CCR3
 - MHCII
 - CXCR4
 - CD8b
 - MMP9
 - CLDN12
 - OCL-2
 - CAT-1
 - PCNA-2
 - GPX-2
 - SOD-2
 - TPJ-1
 - TLR-9
 - Hep
 - IL1-β
 - IL-10
 - MCSFR1
 - CD3z
 - C3
 - Cas3

RESULTS



Peritoneal exudates, hemoglobin content and intestinal antioxidant enzymes of European seabass sampled before (0h) and 6 hours after infection (6h, n=9) for each dietary treatment. Different lowercase letters denote significant differences between diets while different symbols stand for differences within sampling point (Two-way ANOVA; p≤0.05).

CONCLUSIONS



The highest dose of algae purified extracts improved antioxidant and immune response after bacterial challenge

FUTURE WORK

❖ Since Diet1 revealed immune-enhancing properties, **optimization of feeding regimen** will be tested in future experiments.

ACKNOWLEDGEMENTS

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