PHAGOCYTIC MECHANISMS OF EUROPEAN SEABASS (*Dicentrarchus labrax*) ERYTHROCYTES

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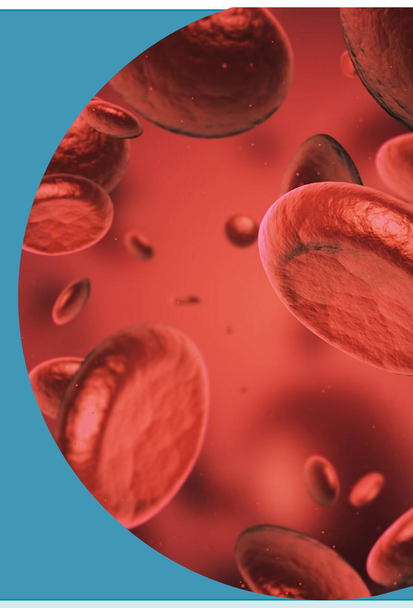


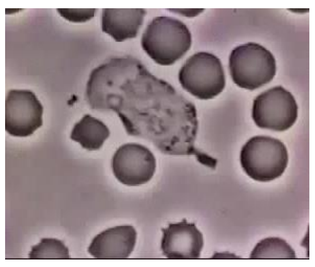
INTRODUCTION

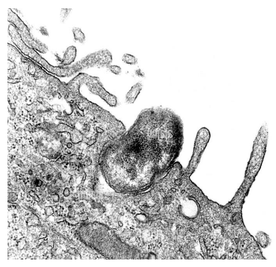
Phagocytosis

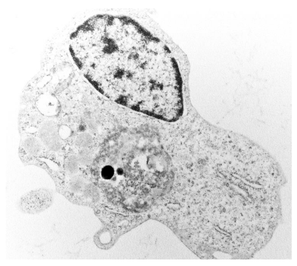
Definition:
Crucial defence process by which a cell is able to engulf a particle of diverse nature (*e.g.*, cellular debris, microorganisms, etc.).

Executed by:

- Leucocytes: macrophages, granulocytes and B lymphocytes.
- Non-professional phagocytes: fibroblasts, skin mucus-secreting cells, thrombocytes and endothelial cells.

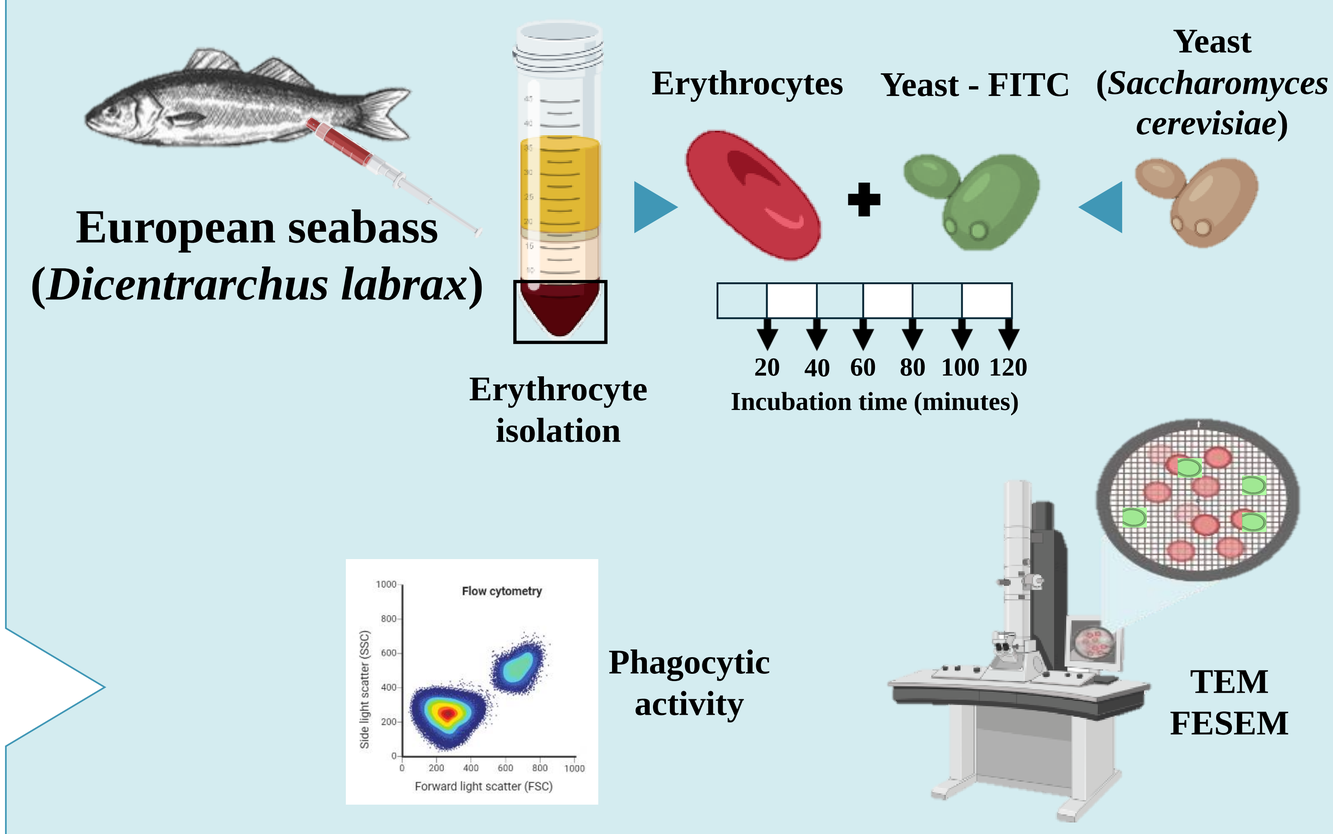






In this context, although **fish erythrocytes** have been implicated in immune activities, their role in phagocytosis has received little attention.

METHODOLOGY



RESULTS AND DUSCUSSION

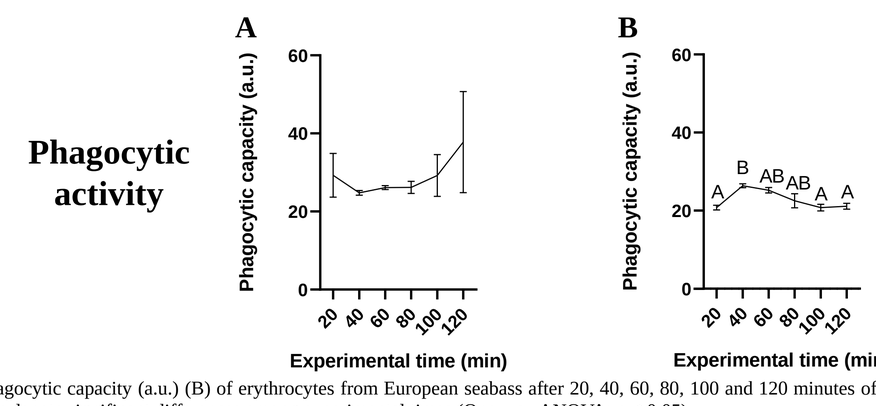


Figure 1. Phagocytic ability (%) (A) and phagocytic capacity (a.u.) (B) of erythrocytes from European seabass after 20, 40, 60, 80, 100 and 120 minutes of incubation with FITC-labelled yeast *Saccharomyces cerevisiae*. Data represent the mean ± standard error (n = 6). Different letters denote significant differences among experimental times (One-way ANOVA; $p < 0.05$).

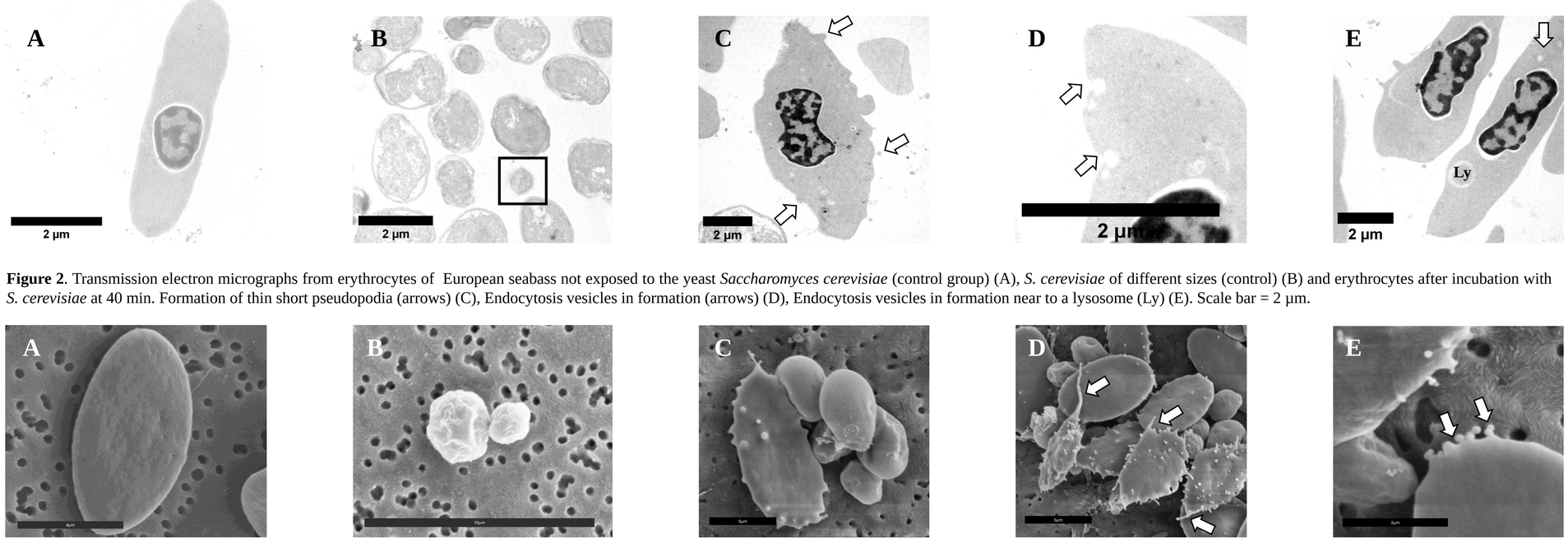
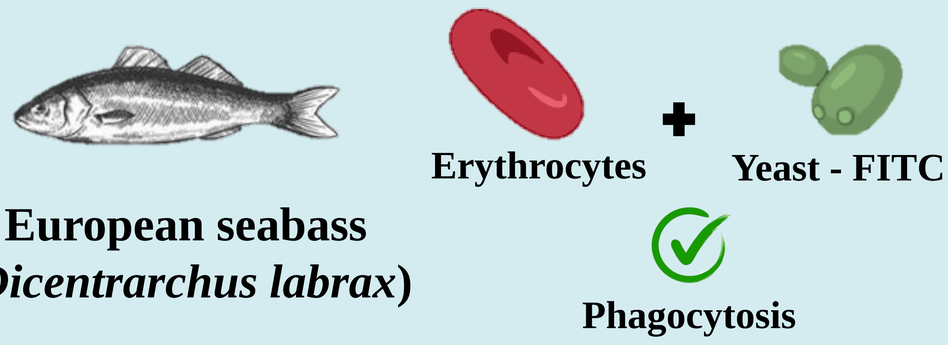


Figure 2. Transmission electron micrographs from erythrocytes of European seabass not exposed to the yeast *Saccharomyces cerevisiae* (control group) (A), *S. cerevisiae* of different sizes (control) (B) and erythrocytes after incubation with *S. cerevisiae* at 40 min. Formation of thin short pseudopodia (arrows) (C), Endocytosis vesicles in formation (arrows) (D), Endocytosis vesicles in formation near to a lysosome (Ly) (E). Scale bar = 2 µm.

Figure 2. Emission scanning electron micrographs from erythrocytes of European seabass not exposed to the yeast *Saccharomyces cerevisiae* (control group, Scale bar = 4 µm) (A), *S. cerevisiae* of different sizes (control, Scale bar = 10 µm) (B) and erythrocytes after incubation with *S. cerevisiae* at 40 min. Contact of erythrocytes with yeasts (Scale bar = 5 µm) (C), Formation of thin large pseudopodia (arrows) (D), Formation of thin short pseudopodia (arrows) (Scale bar = 2 µm) (E).

CONCLUSIONS



Abstract

Acknowledgements:
This work was supported by the European Union–NextGenerationEU (Margarita Salas postdoctoral grant, Ministerio de Universidades of the Government of Spain). This research forms part of the ThinkInAzul programme and was supported by MCIN with funding from European Union Next Generation EU (PRTR-C17.I01) and by Comunidad Autónoma de la Región de Murcia - Fundación Séneca.