Cultivated Mediterranean Scallop

Scallop cell resources for safer, season-independent seafood: we offer establishing robust primary cultures from *Pecten jacobaeus* and defining species-fit media and supplements that support controlled growth and future line development.

BACKGROUND

Marine invertebrates are underrepresented in cellular agriculture, despite strong nutritional, commercial, and environmental drivers. Scallop dredge fisheries damage seabed biodiversity, wild stocks vary seasonally and can accumulate biotoxins, heavy metals and microplastics, and – uniquely – no relevant farming activities are published for the Mediterranean scallop *P. jacobaeus*. This combination makes it a compelling model for cultivated seafood and motivates a controlled, year-round production approach.

TECHNOLOGY

In collaboration with Aquarium Pula, we will establish and characterize two primary cell cultures – adductor muscle and female scallop gonads – evaluate cell morphology and proliferation under temperature, pH, and salinity conditions close to the natural ones, and quantify the impact of species-informed supplements. The supplements under test include sterile-filtered hemolymph from young and maturing scallops and phytoplankton extracts; media will be benchmarked in sterilized Adriatic seawater and in commercial growth medium (L-15). In parallel, an aquarium-tank growth monitoring study provides comparative insight to inform media design and a sustainable cell/tissue sourcing concept. Whole-genome sequencing with draft annotation will establish a foundational omics resource for future line development and quality control. Ethical sourcing uses non-invasive biopsy and established hemolymph protocols wherever feasible; Aquarium Pula contributes husbandry expertise and certified animal-care standards. The same primary-culture, media-optimization, and omics workflow can be applied to additional mollusc species such as mussel, oyster, and clam.

OFFER

We will deliver documented protocols and early-passage primary cultures for adductor and gonadal tissues; quantified proliferation behavior across defined temperature, pH, and salinity bands; media formulations with and without hemolymph and phytoplankton extracts; an initial omics package including a draft genome; and a transfer plan covering cryopreservation, husbandry, and subsequent line improvement.

We can tailor the collaboration to your needs – from a rapid feasibility check to staged development and transfer – with deliverables, timelines, and scope defined to your requirements.

Work proceeds under NDA; project-specific results, cell lines and associated IP can be fully transferred to you as our partner.

EXPERTS

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DEVELOPMENT STATUS:

Status of the project proposal –
Technology Readiness Level 2
(technology concept formulated)

KEYWORDS

- Cultivated Scallops
- *Pecten jacobaeus*
- Marine Invertebrate Cell Culture
- Muscle Cells
- Seawater Media
- Hemolymph Supplement
- Phytoplankton Extracts
- Whole-Genome-Sequencing
- Biodiversity-Friendly Seafood

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