

CASE STUDY



Valogen Biosciences Ltd and University of Plymouth

Developing a Circular Economy Plant Protein to Support Healthy Ageing

Project Type:

Collaborative R&D

Project Duration:

1st Sep 2023 - 31st Jan 2025 (17 months - 6 periods)

Project Summary:

The project sought to create and validate a digestible, sustainable protein ingredient—PhytoPep™—from rapeseed press-cake to support muscle function in elderly people and those with clinical conditions such as cancer or kidney disease.

Impacted Group: Older adults (65+), malnourished populations, and clinical nutrition sectors.

Client/Partner Background

Valogen Biosciences Ltd is a circular economy biotechnology company creating high-value bioactive ingredients from agricultural waste.

University of Plymouth provided research and clinical nutrition expertise, particularly in bioenergetics and dietary needs of older adults.

Executive Summary

As Monitoring Officer for Innovate UK, I oversaw a pioneering CR&D project led by Valogen Biosciences Ltd in partnership with the University of Plymouth. The initiative aimed to develop PhytoPep™, a novel, highly digestible protein hydrolysate from oilseed rape waste, targeting sarcopenia in ageing populations. This case study highlights its scientific breakthroughs, commercial promise, and alignment with the Government's nutrition, sustainability, and healthy ageing priorities.

Key Responsibilities & Actions Taken

Project Scoping:

/ Reviewed innovation aims, work packages, and commercial viability.

Stakeholder Engagement:

/ Liaised with University of Plymouth, Campden BRI, and Valogen's executive team.

Monitoring & Evaluation:

/ Attended KOM and QRM meetings, reviewed milestone and exploitation progress.

/ Assessed scope, time, cost, risk, and exploitation performance.

Exploitation Planning:

/ Supported strategic alignment with NHS partners and future grant pathways (BBSRC/MRC).

Advocacy & Communication:

/ Helped shape project narrative around public health and circular economy benefits.

Notable Achievements / Outcomes

- / PhytoPep™ demonstrated greater bioenergetic stimulation in muscle cells than leucine, acting as an “exercise mimetic”.
 - / Project completed on time and under budget.
 - / Two patents filed related to peptide bioactivity and manufacturing.
 - / Engagements initiated with Abbott, Nestlé, Danone Nutricia, Fresenius Kabi.
 - / Preliminary food formats (e.g., bread, soup) validated for elderly care settings.
 - / Recognised at major industry events and featured in the Innovate UK Pavilion.
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Challenges & Solutions

- / **Risk:** Personnel turnover at University of Plymouth caused a delay.

Solution: Two-month extension managed effectively, leading to deeper findings and project completion.

- / **Challenge:** Limited compositional detail on active peptide fractions.

Solution: Planning for post-project BBSRC-funded mechanistic studies.

Strategic Importance

This project aligns with:

- / Better Food for All – Nutrition Early Stage priorities
 - / NHS cost-saving by targeting sarcopenia (£5.7bn annual cost)
 - / Net Zero and circular economy through rapeseed waste valorisation
 - / Healthy ageing and protein accessibility in vulnerable populations
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Final Reflection

This project exemplifies how science-led SMEs, supported by academic and government-backed funding, can deliver scalable innovation with public health impact. The role of Monitoring Officer enabled me to support not just progress tracking but also horizon-scanning for future commercial and policy integration.