



Innovate
UK

Sustainable medicines manufacturing innovation

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OUR VISION AND MISSION

OUR VISION

Our Vision is for a UK where breakthrough ideas become industry giants

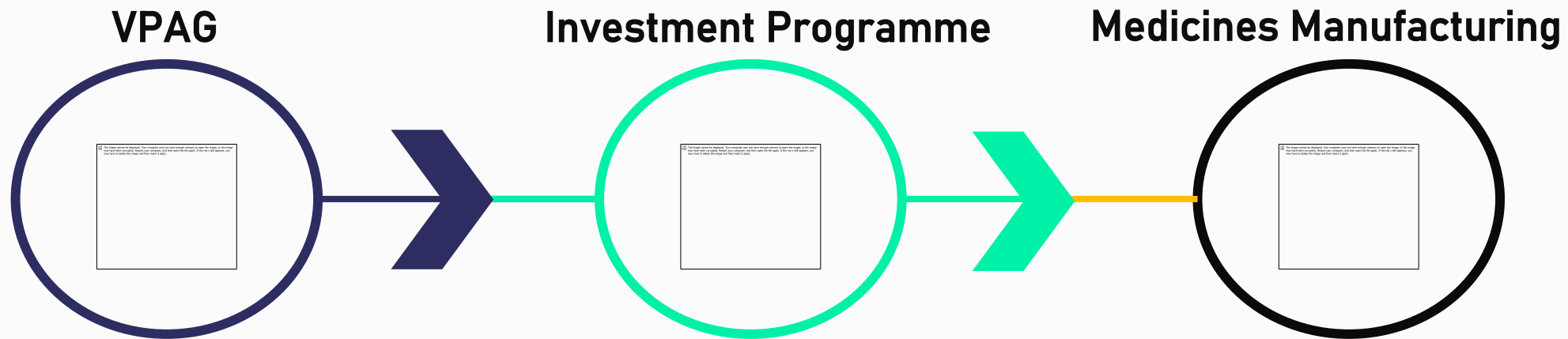
OUR MISSION

Our Mission is to accelerate business innovation for the nation



Sustainable Medicines Manufacturing Innovation Programme (SMMIP)

- £78m allocated to SMMIP as part of the VPAG agreement.
- Delivered by Innovate UK on behalf of the Office for Life Sciences



SMMIP scope and aims

Core Pillars



Green Chemistry

- New Technologies
- Biocatalysis
- Solvent-free systems
- Biomanufacturing
- New synthetic processes



Circularity

- Recycling & reuse
- Alternative solvents and polymers
- Selection of materials
- Standardisation



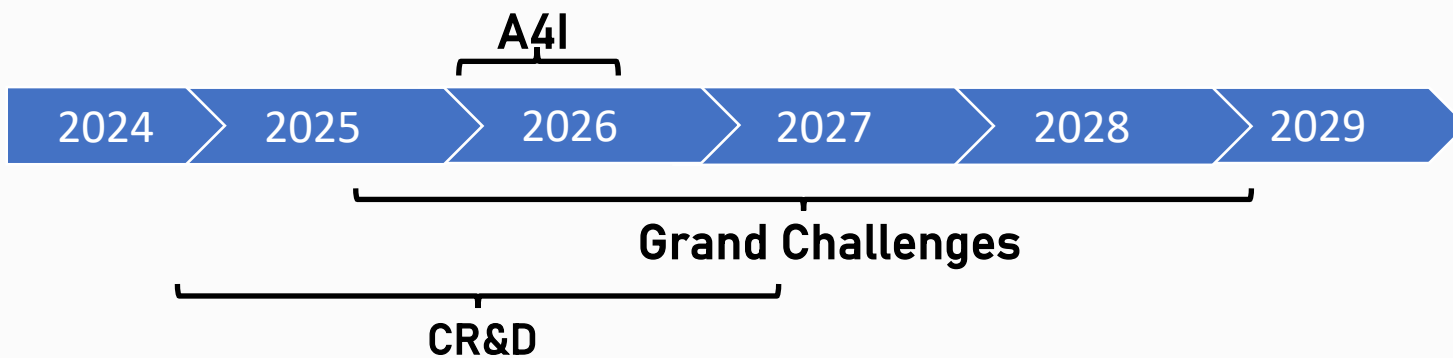
Productivity

- Digitalisation and AI
- Continuous processing
- Automation
- Supply chain optimisation

Critical Enablers

Regulation

Measurement,
Standards & Data



14 CR&D Awards

- £13 million awarded to 31 organisations

9 Grand Challenges awards

- £61 million awarded to 73 organisations

Analysis for Innovators

- Delivery partners: BSI, NPL, NML/LGC, CGTC, CPI, MDC



Grand Challenge Brochure



Meet the team

Environmental peptide production

Peptides are naturally occurring molecules that play a significant role in cell signalling and function. They are also artificially synthesised due to their important properties in research and in medicines, such as insulin. However, peptide medicines are difficult and expensive to make. The current manufacturing processes are extremely wasteful, requiring environmentally hazardous chemicals.

The Origin Peptides project will develop a novel peptide synthesis technology, in combination with industry-leading product sampling technologies, to create a commercially ready peptide manufacturing system to make life-saving medicines with the smallest environmental footprint and at the lowest cost.

This technology has been demonstrated in the laboratory at small scale. The

next step is to expand that process at larger scales which pharmaceutical companies can utilise to make medicines for those in need.

This collaborative project will work with the world's biggest manufacturers of peptide medicines together with world-class experts in engineering, chemistry and manufacturing processes from the renowned CPI (UK) to build

a cutting-edge process and hardware suite for environmentally friendly peptide manufacture.

These will be produced locally, ethically, environmentally and using circular economy, in a way that is only possible with Origin Peptides' new technology – a world first in aqueous templated peptide synthesis.

 Origin Peptides

 Queen Mary
University of London

 cpi

 new
gradient

Project lead: Origin Peptides

Partners: CPI, New Gradient, Queen Mary University of London

Funded amount: £6,411,241

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Green Chemistry

Come meet Origin Peptides at the SMMIP Stand!

Meet the team

Industrialising UK bio-based solvents for global medicine manufacturing

Global medicines manufacturers use around two million tonnes of solvents each year across active pharmaceutical ingredients synthesis, purification, formulation and cleaning. While essential to pharmaceutical production, solvents are one of the largest contributors to Scope 3 greenhouse gas (GHG) emissions in medicines manufacturing. As the sector accelerates toward net zero targets, reducing emissions associated with conventional fossil solvent manufacture and disposal has become a critical challenge. Current bio-based alternatives remain constrained by cost, limited availability and difficulties in meeting pharmaceutical-grade specifications.

This 36-month project will industrialise low-GHG, bio-based

'drop-in' solvents for global medicines manufacturing, focusing on bio-acetonitrile, bio-acetone and bio-heptane/n-hexane. These solvents are chemically equivalent to fossil-derived materials, enabling adoption without changes to existing manufacturing processes or infrastructure. The project targets lifecycle GHG reductions of at least 60% compared with conventional solvents, supporting manufacturers in meeting growing regulatory, customer and procurement-driven decarbonisation requirements.

The consortium is led by Exactmer, with the strategic lead of GlaxoSmithKline (non-funded partner), the UK-headquartered global medicine

and vaccines manufacturer, with support from major industry partners. The project will use advanced membrane purification technologies to address one of the most significant barriers to bio-based solvent adoption: the high energy and cost required to achieve pharmaceutical-grade purity and moisture specifications.

The consortium brings together technology providers, manufacturers, global pharmaceutical companies and translational research and innovation organisations. Bio-based solvents will be produced from waste-derived biomass and captured biogenic carbon, and demonstrated in realistic medicines manufacturing environments, including both small molecule, liquid and solid phase oligonucleotide synthesis

processes. This project was initiated by Environmental Resources Management (ERM) and Ayming, who co-ordinated the consortium's successful funding application for the £9.29m project. ERM will support the delivery of the project and market adoption.

By project completion, pharmaceutical-grade bio-based solvents will have been demonstrated, regulatory pathways will be de-risked, and a UK-owned supply chain will be established. The project aims for rapid global adoption of low-GHG solvents in the early 2030s, helping to decarbonise medicine manufacturing.



Atmospheric^{AI}



OXCCU

SOLVE
chemistry

Queen Mary
University of London



UNIVERSITY OF LEEDS

Project lead: Exactmer

Partners: Atmospheric AI, Celtic Renewables, CPI, Croda, Cytiva, GlaxoSmithKline, OXCCU, Queen Mary University of London, Solve Chemistry, University of Leeds

Funded amount: £7,316,907

Come meet Celtic Renewables at the SMMIP Stand!

Related Opportunities

Medicines Manufacturing Data Institute Phase 1

Opens 07/09/2026

Closes 14/10/2026

UK registered organisations can apply for a share of up to £500,000 for a phase 1 project to establish the Medicines Manufacturing Data Institute (MMDI).

[More information](#)

Life Sciences Innovative Manufacturing Fund (LSIMF): Expression of Interest

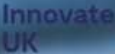
EOIs accepted on a rolling basis; quarterly assessments

Capital grants to support investments over £8m in the manufacture of human medicines, medical diagnostics and medtech products.

[More information](#)

Join our [community of practice](#) and/or [LinkedIn group](#) to stay in up to date on all the latest events and funding opportunities

Any Questions?



Sustainable Medicines Manufacturing Innovation Programme

Supporting innovation in medicines
manufacturing to drive economic growth,
sustainability and efficiency



<https://linktr.ee/InnovateUKSustainableMedsManu>