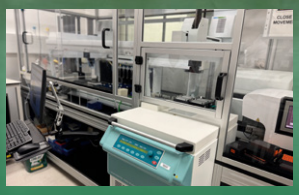
PLANT SYNBIO AUSTRALIA

TRANSFORMING AGRICULTURE AND BIOMANUFACTURING THROUGH PLANT SYNTHETIC BIOLOGY



Plant SynBio
at the Australian National University

The new Plant SynBio–ANU Node offers plant synthetic biology services for agricultural species, particularly in oilseeds, cereal crops and legumes.

Researchers, industry and government partners can easily acquire these offerings on a fee-for-service basis, directly accessing specialised infrastructure and expertise.

Plant SynBio – ANU also facilitates larger, longer term, co-designed collaborative projects, as well as access to incubation space for the start-up community.

The facility delivers capability across the full synthetic biology cycle, including the design of molecular componentry, genetic editing and transformation and the phenotyping of bio-designed plants, as services available for clients to engage and procure.

plantsynbio.au

Plant SynBio Australia is funded through Bioplatforms Australia under the National Collaborative Research Infrastructure Strategy (NCRIS) and institutional partners

NCRIS National Research Infrastructure for Australia An Australian Government Initiative

BIOPLATFORMS AUSTRALIA

Australian National University

Synthetic biology infrastructure for Australian innovation

The Plant SynBio Australia node at the Australian National University is a national hub dedicated to engineering the future of agriculture.

Our mission is to harness the power of synthetic biology to tackle grand challenges in sustainable agriculture, climate change mitigation and the biomanufacturing of high-value products.

Our research and service focus

We provide end-to-end capabilities and expertise to accelerate innovation for research institutions, government agencies and industry partners. Our work integrates seamlessly with national facilities like the Australian Plant Phenomics Network and Bioplatforms Australia.

Capabilities include:

- Advanced genetic engineering, gene editing, transgenesis and transformation services for multiple crop species.
- Full pipeline support from designing molecular components and transient expression systems to omics-based evaluation and regulatory compliance.
- Controlled environment testing, scale-up and field trials through strategic partnerships.
- Access to cutting-edge equipment, expertise in molecular componentry and stable transformation platforms.

Driving commercialisation and collaboration

We are committed to translating research into real-world impact and growing Australia's agri-tech sector by:

- Providing incubation space and collaboration opportunities for startups.
- Offering a "research hotel" model for researchers and industry to work and train within our facility.
- Addressing key bottlenecks in the commercial pipeline, including freedom-to-operate and regulatory pathways.

Our impact

By leveraging advanced breeding technologies and synthetic biology tools, we aim to:

- Create climate-resilient crops and sustainable agricultural practices.
- Enable the plant-based production of biomaterials, fuels, and pharmaceuticals.
- Provide Australian researchers and industry with globally competitive, accessible infrastructure and expertise.

Our people

The ANU node is supported by a multidisciplinary team of researchers, bioinformaticians, technical experts and business professionals, offering deep expertise in plant synthetic biology and regulatory navigation to deliver climate-ready agricultural solutions.

Collocated services

Plant SynBio–ANU is deeply embedded in the plant R&D ecosystem of Biomolecular Resource Facility, Australian Plant Phenomics Network, Centre for Advanced Microscopy, Joint Mass Spectrometry Facility.

Infrastructure and capability

Plant SynBio services

- Accelerated plant breeding
- Gene editing
- Spatial and temporal gene expression design
- Trait development
- Stewardship and consultancy
- Startup incubation

Automated innovation platform

- Janus 8-Tip automated liquid handling workstations
- Automated Leica DMi8 inverted microscope
- BD FACSDiscover™ S8 cell sorter
- QIAcuity One, 5plex ddPCR
- NanoDrop Eight high-throughput spectrophotometer

Plant tissue culture & transformation

- Major agricultural species transformation pipelines
- Agrobacterium and biolistic transformation
- High-throughput protoplast and cell systems
- Automated KREO universal plate pourer PPC-SH

Plant growth facilities

- PC2 certified glasshouse
- PC2 certified constant temperature room
- Access to APPN PC2 certified controlled environment chambers and walk-in growth rooms

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