



20 August 2019

Summary of Licence Application DIR 169

The University of Queensland has made an application under the *Gene Technology Act 2000* (the Act) for Dealings involving the Intentional Release (DIR) of genetically modified organisms (GMOs) into the Australian environment.

Project Title	Limited and controlled release of microalgae genetically modified for increased production of fatty acids ¹
Parent organism	<i>Nannochloropsis oceanica</i>
Genetic modifications	
Genes responsible for the modified traits	Introduced gene conferring increased production of fatty acids: <ul style="list-style-type: none">• NTE – thioesterase gene from <i>Nannochloropsis oceanica</i> Deleted genes conferring inability to use nitrate as a nitrogen source: <ul style="list-style-type: none">• NRT – nitrate transporter gene• NR – nitrate reductase gene
Genetic modification method	Electroporation
Number of lines	Up to five cell lines
Principal purpose	To assess and optimise growth characteristics and production conditions of the GM microalgae under outdoor conditions
Proposed limits	
Proposed use of GM microalgae	No use in commercial food or animal feed proposed
Proposed location/s	The University of Queensland's Pinjarra Hills campus (Centre for Solar Biotechnology pilot plant), Brisbane City, Queensland
Proposed release size	One pilot plant site, with microalgae cultivated in up to six tanks (600 litre cultivation volume each)
Proposed period of release	A total period of up to one year, between 2019 and 2022

Proposed Controls include measures to:

- restrict access to the trial site by people and animals
- restrict the spread of propagules through site selection and the use of clear plastic lids over tanks
- restrict the ability of the GM microalgae to persist in the natural environment by modifying the microalgae to be incapable of using environmental nitrate as a nitrogen source
- ensure GM microalgae are contained during transport and storage in accordance with the Regulator's guidelines
- ensure that GM microalgae do not remain after harvest through decontamination of cultivation vessels and regular post-harvest monitoring of waste water.

¹ The original title for the application was 'Limited and controlled release of *Nannochloropsis oceanica* genetically modified for increased production of fatty acids'.

Consideration as a limited and controlled release (trial)

This application is considered to be a limited and controlled release application under section 50A of the Act, as the Regulator was satisfied that:

- its principal purpose is to enable the applicant to conduct experiments; and
- the applicant has proposed limits and controls that are of a kind that the Regulator is not required to consult before preparing the consultation version of the RARMP.

Next steps

The Gene Technology legislation sets out what the Regulator must do, as well as what the Regulator can or must consider, before deciding whether or not to issue a licence for this application.

The Regulator's staff will prepare a consultation version of the Risk Assessment and Risk Management Plan (RARMP) considering aspects of the application, including the proposed limits and controls, in accordance with the legislation.

The Regulator will seek comment on the consultation RARMP from the public, as well as a wide range of experts, agencies and authorities. The public and experts will be invited to provide submissions on the risks to human health and safety, and on risks to the environment from the proposed release.

At this stage, the consultation RARMP is expected to be released for comment in **October 2019**.

After consultation, the Regulator's staff will finalise the RARMP, taking into account advice on relevant matters. The finalised RARMP will form the basis of the Regulator's decision whether or not to issue a licence. The consultation and final versions of the RARMP and associated documents will be available on the [OGTR website](#) when they are released.

Other information available from the [OGTR website](#):

- information on Australia's national scheme for regulation of gene technology
- information on the DIR application process.

Please use the contact details below, if you

- would like a copy of the application. Please include the identifier DIR 169.
- have any questions about the application or the legislated evaluation process or
- wish to register on the mailing list.

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