

# Radiotracers - Provision

Radiotracer provision focuses on the production and delivery of radiotracers for pre-clinical and clinical research. These radiotracers are supplied at either the Lucas Heights campus or the Camperdown campus.

The radiochemistry facility at Lucas Heights focuses on production of radioiodine and radiometals radiotracers for preclinical evaluation. The radiochemistry facility at Camperdown focuses on production of [<sup>11</sup>C]Carbon and [<sup>18</sup>F]Fluoride radiotracers\* for preclinical evaluation.

The Camperdown facility also has dedicated GMP facilities and a licence that enables the production of [<sup>18</sup>F]radiopharmaceuticals for phase 1-3 clinical research. Both facilities are able to deliver radiometals and radioiodine radiopharmaceuticals for phase 0 -1 clinical research trials. Anticipated TGA certification in 2021 will allow radiometal radiopharmaceutical production under approved GMP conditions for clinical research. Our expertise in this area also allows provision for tech transfers of radiotracer production to other labs.

Both production teams can deliver standard radiotracers sourcing the starting materials/kits from commercial vendors; this enables users access to more than 300 known radiotracers. Novel or non-commercial radiotracers can also be produced if starting materials are supplied by the collaborator; typical engagement would be initiated by firstly accessing Biosciences radiotracer development capability.

The production of radiotracers is supported by 17 hot cells and 12 lead lined fume hoods, a suite of automated radiotracer modules, equipment and analytical hardware.

Examples of the radiotracers that have been produced for preclinical research are shown in the table below.

Clinical and preclinical delivery engagement modes are via the following pathways:

- Preclinical production from Lucas Heights or Camperdown radiochemistry facilities
- Clinical production from the **Camperdown and Lucas Heights radiochemistry facilities**
- Tech transfer of radiotracer protocols to the host organisation and
- Tech transfer to the host organisation with assistance from the ANSTO team for in-house clinical radiotracer deployment.

## Capability selections

- Radiotracer provision – preclinical research
- Radiotracer provision – clinical research.

For further information please contact:

[Ivan Greguric](mailto:ivan.greguric@ansto.gov.au) Phone: +61 2 9717 3759  
[ivan.greguric@ansto.gov.au](mailto:ivan.greguric@ansto.gov.au)

[Nigel Lengkeek](mailto:nigel.lengkeek@ansto.gov.au) Phone: +61 2 9717 3622  
[nigel.lengkeek@ansto.gov.au](mailto:nigel.lengkeek@ansto.gov.au)

[Tien Pham](mailto:tien.pham@ansto.gov.au) Phone: +61 2 9717 9515  
[tien.pham@ansto.gov.au](mailto:tien.pham@ansto.gov.au)

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### Radiotracers for pre-clinical research

<sup>11</sup> C-Choline (cancer research)	<sup>18</sup> F-PBR 111 (neuroscience research)
<sup>11</sup> C-Raclopride (neuroscience research)	<sup>18</sup> F-FHGB (reporter gene)
<sup>11</sup> C-Acetate (metabolism research)	<sup>18</sup> F-MEL50 (cancer research)
<sup>11</sup> C-Methionine (cancer research)	<sup>18</sup> F-Fallypride (Neuroscience research)
<sup>67,68</sup> Gallium and <sup>64</sup> Cu-nanoparticle	<sup>67,68</sup> Gallium <sup>123,124,125</sup> I- antibody
<sup>123,124,125</sup> I and <sup>68</sup> Gallium-peptides	<sup>67</sup> Gallium particle