



USER MEETING 2016

24-25 NOVEMBER

National Centre for Synchrotron Science



Ansto

Australian Synchrotron

Contribution ID : 207

Type : Poster

IMBL facilities for in-vivo research

The Imaging and Medical Beamline (IMBL) has extensive facilities for holding, preparing and performing imaging and radiotherapy experiments with animals.

Animal held and/or prepared to date

- Mice, rats, rabbits, sheep and a piglets.

Animal care

- The IMBL team includes a veterinary surgeon and we can provide excellent support to our users with anesthetics, surgery and animal care practices.

Technical - Radiotherapy

- A high-throughput dynamic micro-beam radiation therapy (DynMRT) setup for rodents is available for users.
- Image guidance and dose delivery through standard or custom conformal masks are available.
- The DynMRT setup includes a validated Patient Safety System (PaSS), an important step in our programme towards human trials.

Technical - Imaging

- Convenient and modular positioning stages are available for mice and rats.
- For animals up to 100kg the positioning is done using the robotic Large Animal Positioning System (LAPS).
- Software triggering of shutter and detector is implemented, with limited (slow) physiological triggering.
- Full physiological triggering (hardware, fast) of shutter and detector will be available in 2017. This will include dose reduction shuttering.
- *Ex vivo* Computed Tomography (CT) is available during imaging experiments if requested in advance.
- *In vivo* CT will be trialed in 2017 and developed if successful and in demand.

Technical - General

- Radiotherapy and imaging enclosures include laser beam guidance and live monitoring.
- We provide a large range of surgery, anesthetic, ventilation and monitoring (off-line and remote on-line) equipment, as well as all the drugs required for preparation and experiments.
- 2 surgeries and three laboratories are available for our users.

User training

- We recently ran a 4 days training session for potential users. It focused on small animal cannulation for contrast agent injection in micro-angiography. Targets were lung and heart, brain, rear limbs. EOIs for future training will be recorded at the poster sessions.

Our poster will describe our facilities and equipment, and present the technical side of recent *in vivo* experiments.

Keywords or phrases (comma separated)

in vivo, imaging, radiotherapy

Are you a student?

No

Do you wish to take part in the Student Poster Slam?

No

Are you an ECR? (<5 yrs since PhD/Masters)

No

What is your gender?

Male

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Track Classification : Imaging