

Radiobiology

The radiobiology capability specialises in the measurement and manipulation of radiation and radioactive materials within biological matrices, systems and living organisms.

With a strong foundation in molecular biology, cell biology, biochemistry, pharmacology and *in vitro* and *in vivo* tissue analysis, we specialise in the quantification and tracing of radiation, radio-isotopes or radiolabelled molecules using a variety of imaging and radiation counting based techniques. We maintain PC1 certified radiation contamination controlled (blue/blue) laboratory spaces, including tissue culture facilities that allow for aseptic manipulation of radioactive material. Another key aspect, and research interest, of the Radiobiology capability is the measurement of radiation interactions and impacts on living organisms with a focus on biometry and biomarkers of damage.

Radiobiology integrates its biological capabilities extensively across ANSTO to take advantage of its unique position close to the landmark infrastructure of OPAL, Centre for Accelerator Science and the Australian Synchrotron. We maintain an equipment and knowledge base that allows the preparation of biological samples for analysis by a variety of higher energy techniques including, but not limited to, [neutron activation analysis](#) (NAA), [x-ray fluorescence microscopy](#) (XFM) and [particle induced x-ray emission](#) (μ PIXE), and the integration of these techniques with traditional bio-analytics. Our capability is also integrated with ANSTO's various irradiation and dosimetry facilities allowing for the precision irradiation and dose assessment of biological material.

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