



THE UNIVERSITY OF
SYDNEY

Sydney Analytical Protein Production Services

Extending the scope of your research with protein production solutions

Our aim is to assist researchers from all backgrounds with the expression and purification of their proteins of interest. We work with three different expression hosts (bacterial, insect, and mammalian cells) and use highly specialised protein purification and characterisation equipment.

General workflow

Protein
expression



Protein
purification



Protein QC &
characterisation

Protein expression













- We can express protein in bacterial, insect or mammalian expression systems. We can tailor these to suit each protein, dependent upon what the researcher requires
- The selection of expression host is crucial, and this table helps make an initial decision in the absence of published protocols
- We maintain all equipment required for protein expression, including incubators for growing bacterial or insect cells, and static incubators for mammalian culture



Protein purification

- We employ a variety of initial purification techniques, including affinity or charge based methods. These include:
 - Ni-NTA, for polyhistidine tag.
 - Glutathione Sepharose, for GST tag.
 - Anti-FLAG affinity gel, for FLAG tag.
- Most purifications incorporate a second purification step by FPLC. We have several automated Cytiva ÄKTA systems – including an AKTA Pure M with sample pump – that we can use to carry out ion exchange (charge-based separation) and/or size exclusion (size-based separation) to ensure a highly pure final protein

Worst **Best**

Speed	 Insect	 Mammalian	 Bacterial
Cost	 Mammalian	 Insect	 Bacterial
PTMs	 Bacterial	 Insect	 Mammalian
Folding	 Bacterial	 Insect	 Mammalian

Specialist Services:

- Membrane protein expression and purification
- Expertise in ultracentrifugation for complex sample separations – including density gradient separation followed by automatic gradient fractionation

Protein QC and additional characterisation services:

- All proteins made in the facility are assessed for final purity by SDS-PAGE, however, we can provide additional characterisation analysis on request
- **Please see our characterisation flyer for more information**



**To request more
information or for
instrument training,
please contact us:**

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