

LSOP Title	Exudate Collection from Hydroponic Arabidopsis Roots
LSOP No.	LSOP11
Version	1.1
Location	UQ Node/Centre-wide
Policy/Procedure Link	OGTR
Risk Assessments	
Approved by	Milos Tanurdzic
Date Approved	11/10/2021
Date Effective	03/06/2021
Next Review Date	03/06/2022
Contact for Assistance	plantsuccess@uq.edu.au

1.0 Scope

This procedure covers the protocol for exudate collections from hydroponic Arabidopsis roots.

This LSOP does not cover the growth of hydroponic Arabidopsis.

2.0 Materials and Equipment

1. 1.5 mL Centrifuge tubes
2. Hoagland's Nutrient Solution
3. Water
4. Black Containers 33x27x12 cm containing polystyrene rack
5. Forceps
6. Pump system
7. Charcoal Bag

3.0 Prescribed Actions

1. Grow your plants first using small boxes.

2. Use black containers 33x27x12cm (LxWxH) containing a polystyrene rack that can hold up to 63 plants using 1.5 mL microcentrifuge tubes (Figure 1A).
3. Use 5 L of nutrient solution (0.5x Hoagland's) per container. Make solutions 10x in concentration and dilute it to each container.
4. Transfer plants to big containers after thinning. If roots are a few mm outside the tubes they can be damaged when transferring.
5. Pull the rock wool with forceps until roots are inside the tube, push down the tube in the rack and put gently the rock wool in place.

NB: If roots are too big, then roots can be coiled inside the tube before transferring (time consuming).

6. Install a pump system that allows circulation between containers of the same replicate. Containers are connected by plastic tubes and small pipes (Figure 1B). Use 6 L of solution when pumps are in use.
7. Put inside each pump a charcoal bag (1.5 g) for three days to collect exudates.

4.0 Monitoring and Review

This LSOP will be reviewed annually, or as may be otherwise required because of changes to ARC requirements or changes to institutional policy and procedure.

5.0 Appendix



Figure 1. Arabidopsis plants were grown in small boxes and transferred to big containers for exudates collection. Low phosphate (10%) started at 25 days of growth. A: ws-4 plants grown for five weeks. B: Pump system allowing solution circulation (four-week-old plants).