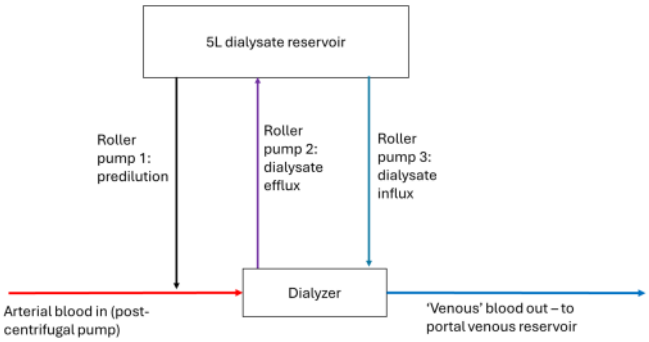
PROJECT NUMBER

20524

Recirculating ex-vivo organ dialyser for normothermic perfusion

This ex-vivo organ dialyser integrates a recirculating dialysate circuit with controllable transmembrane flux to continuously manage perfusate composition during normothermic perfusion. Using pumped influx/efflux, optional predilution, and ‘push-pull’ operation, it supports removal of metabolic waste and damage-associated species while maintaining volume control - designed as an adjunct to existing liver and kidney perfusion platforms.

Applications: Normothermic liver perfusion, normothermic kidney perfusion, extended organ preservation, organ quality optimisation, pre-transplant conditioning, perfusate homeostasis control, DAMPs clearance



Features	Benefits
Closed-loop, recirculating dialysate circuit designed for portable operation without continuous water supply	Helps stabilise electrolytes and osmolality (and supports broader perfusate homeostasis)
Independent dialysate influx and efflux pumping to precisely control transmembrane flux	Supports continuous waste management to reduce accumulation of organ-derived and perfusate-derived by-products
Supplementary pumped predilution line for volume compensation and perfusate composition control	Enables tighter control of circulating volume and dilution strategies without relying on large fluid consumption

Features	Benefits
‘Push-pull’ alternating transmembrane flux mode to reduce membrane pore blocking and improve clearance consistency	Improves operational flexibility for start/end-of-perfusion workflows (gradual perfusate introduction or flushing)
Optional high molecular weight cut-off dialysis capability for larger-molecule clearance strategies	Provides a route to monitor organ/perfusate state indirectly via dialysate composition and refresh decisions

Patented and Available for

- Co-development
- Consulting
- Licensing

To find out more, contact enquiries@innovation.ox.ac.uk and quote the project number.

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