## A POLYMETHYLPENTENE FIBER GAS EXCHANGER FOR LONG-TERM EXTRACORPOREAL LIFE SUPPORT

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### Objective
Compare safety, effectiveness and long term (72 hours) performance of two long term artificial lungs for use in venovenous extracorporeal life support (Novalung iLA and Medtronic Kolobow SRML).

### Study Design
Prospective two group experimental safety and effectiveness study (n = 5 per group).

### Study Population
10 adult Dorset sheep (35–45 kg).

### Methods
Oxygen and carbon dioxide exchange performance, device pressure gradient, haematology, blood biochemistry, and pathology.

### Results
Superiority of Novalung® iLA in venovenous ECLS in both oxygen and carbon dioxide exchange performance, lower pressure gradient, lower platelet consumption.
No difference between devices in terms of plasma leakage (none), low plasma free haemoglobin, leukocyte counts, blood chemistry, and pathology.

### Commentary
This study demonstrates the advantages of employing the Novalung® iLA device for venovenous ECLS / ECMO.
The device has been designed primarily for extrapulmonary carbon dioxide removal in a pumpless arteriovenous shunt. When used for ECLS / ECMO with a mechanical blood pump the Novalung® iLA outperforms the only currently FDA approved long term gas exchanger due to low pressure gradient, long term durability, and superior oxygen and carbon dioxide exchange performance.