Safety and efficiency assessment of a novel miniaturized oxygenator

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SUMMARY

A membrane oxygenator is a device used to add oxygen to and remove carbon dioxide from the blood. It can be used to replace lungs in cardiopulmonary bypass, and to support lungs in long-term life support called ECMO. Current complications include neurological injuries as subarachnoid hemorrhage, ischemic infarctions, or brain death. These complications are caused by the low efficiency of current oxygenators due to high priming volume of 40 % to 50 % of the total oxygenator volume associated with non-physiological conditions.
The project aim is to prove safety and efficiency of a novel oxygenator concept allowing to reduce priming volume. If successful, this may allow for future development of miniaturized oxygenators and implantable artificial lungs.

PROJECT GOALS

- Translate an idea into the functional prototype
- Show superiority to conventional oxygenators

LONG-TERM GOALS

- Validation and proof of biocompatibility with blood tests and animal models
- License to industry