

Hemocompatibility of a novel 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 during heart surgery, and to support lungs in long-term life support called ECMO.

Current complications include acute kidney injury, as well as neurological injuries such as subarachnoid hemorrhage, ischemic infarctions, and even brain death. These complications are thought to be caused by a high blood priming volume of ~50 % of the total oxygenator volume.

The project aims to develop safe and efficient oxygenator causing less complications based on a novel patented concept reducing the priming volume. If successful, this may allow for future development of miniaturized oxygenators and even implantable artificial lungs.

PROJECT GOALS

- Translate the idea into a functional prototype
- Optimize device design
- Evaluate hemocompatibility

LONG-TERM GOALS

- Validation and proof of biocompatibility by blood testings and animal models
- License to industry