

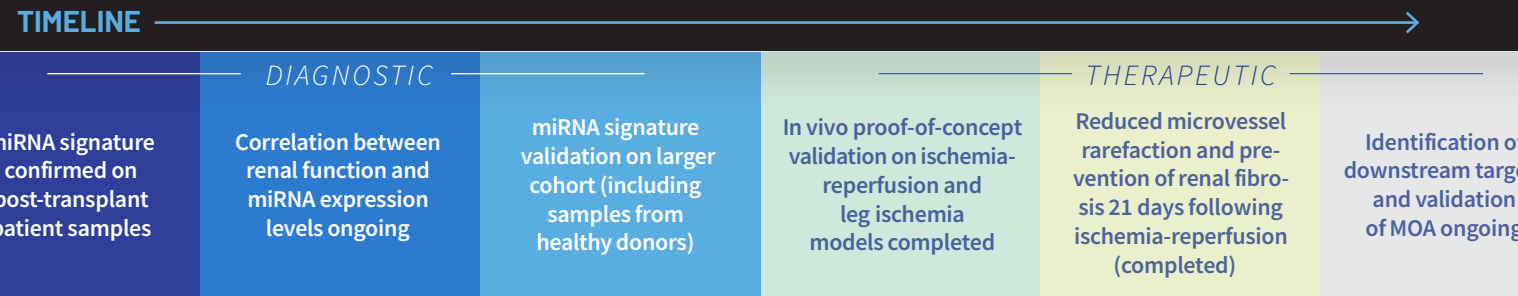
Business Opportunity:

Licensing and Co-development

Market Opportunity:

Global market: \$883M USD (2028) for miRNA

CAGR: 5.9% for miRNA



THE PROBLEM

During major surgery, sepsis, trauma, or kidney transplantation, interruption of renal blood flow followed by kidney reperfusion (ischemia-reperfusion) causes tubular injury and endothelial cell damage that leads to renal dysfunction, acute kidney injury and to chronic or progressive renal failure.

An estimated 35.5 million Americans have kidney disease and about 815 000 Americans are living with kidney failure (1 in 7). Similarly, blockage in the blood flow of the lower limbs, associated with smoking, diabetes, high blood pressure, aging, injury, or hereditary factors, causes a slowing of blood flow to the legs and feet that can cause pain and fatigue and even lead to ulcers, gangrene, and amputations. It is estimated that nearly 200 million people suffer from peripheral vascular disease worldwide, including nearly 45 million Americans.

Since no biomarkers exist to measure capillary reserve, it would be necessary to identify new markers to predict microvessel rarefaction and renal failure in order to quickly identify and initiate appropriate treatments.

OUR SOLUTION

Dr. Marie-Josée Hébert’s team has identified specific miRNAs that could be used as diagnostic and therapeutic agents in the context of microvessel rarefaction.

They have shown that serum measurements of these miRNA markers by PCR predict renal microvessel rarefaction and, thus, the risk of progressive renal failure in humans. Moreover, they have also shown that the administration of these miRNAs in mice prevents renal microvessel rarefaction and accelerates new vessel formation after renal ischemia-reperfusion and leg ischemia.

MARKET

Market application:

- Diagnostic
- Microvessel rarefaction
- Renal transplantation
- Peripheral vascular diseases

It is estimated that the market for miRNAs as a research tool, **diagnostic tool, and therapeutic agent** could reach nearly \$US 883M by 2028 with a CAGR of 5.9% for the period 2023-2028.

The annual cost for actual treatments can range from 56K \$CA to 107K \$CA per patient for dialysis and it is estimated that nearly 200 million people suffer from peripheral vascular disease worldwide.

Market sizes for major therapeutic indications, such as renal insufficiency and peripheral vascular diseases, range from \$3.6 Billion USD (CAGR 8.2% 2029) to \$9.2 Billion USD (CAGR 8.35% 2031), respectively.

TEAM

Marie-Josée Hébert

CRCHUM, Lead PI

Francis Migneault

CRCHUM

Héloïse Cardinal

CRCHUM

Alain Rivard

CRCHUM

Hyunyun Kim

CRCHUM