## Principal Investigator

The University of Tokyo **Ayuko Hoshino**

## Adopted Theme

Development of early diagnostic and therapeutic technologies for preeclampsia targeting pathogenic exosomes

## Subject of Research

**Development of early diagnostic and therapeutic technologies for preeclampsia targeting pathogenic exosomes**

## GTIE VC Collective

Premo Partners

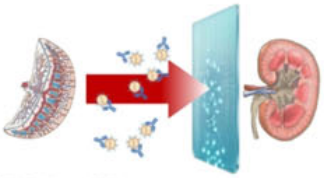
## Overview

This project addresses preeclampsia—a leading cause of maternal and neonatal mortality worldwide for which no effective treatment currently exists. We are undertaking the research and development of a first-in-class therapeutic medical device that targets pathogenic exosomes. Utilizing core technology developed by the Hoshino Laboratory at the University of Tokyo to selectively detect and remove these pathogenic factors, our goal is to prevent premature births and prolonged hospitalizations while reducing the economic burden on healthcare systems. With a planned spin-off in July 2027, our multidisciplinary team of academic, clinical, and business experts is committed to the rapid social implementation of this innovation.

## Business Models (when applying)

We are developing a first-in-class medical device that targets pathogenic exosomes to achieve both early predictive diagnosis and therapeutic intervention for preeclampsia through selective removal. Our primary objective is to obtain regulatory approval and launch in the U.S. market, addressing the urgent demand for healthcare cost containment. Beyond the U.S., our business model aims to improve maternal and neonatal survival rates in resource-constrained regions globally. As a definitive exit strategy, we are targeting a strategic acquisition (M&A) by a leading global medical device manufacturer.

## Activity Planning (when applying)



胎盤由来から腎臓へ取り込まれる病因性エクソソームをターゲットとする
①妊娠高血圧腎症の治療法の開発
②病因性エクソソーム解析による予測診断技術の開発

①Development of therapeutic interventions for preeclampsia by targeting pathogenic exosomes internalized from the placenta into the kidneys.
②Development of predictive diagnostic technologies through the molecular analysis of pathogenic exosomes.

Our initial phase focuses on assessing unmet clinical needs and adoption barriers through interviews with Key Opinion Leaders (KOLs) and obstetricians, primarily in the U.S. market. By participating in global acceleration programs, we will refine our business hypotheses and build an international network under expert mentorship.
In parallel, we will expand our analysis of identified targets to patient-derived clinical samples to strengthen our validation and confirm the utility and reproducibility of our early diagnostic technology. Concurrently, we will develop a prototype for the pathogenic factor removal device and conduct fundamental performance evaluations.
Furthermore, we will collaborate with the University TLO to formalize our Intellectual Property (IP) strategy and evaluate regulatory requirements for global expansion. To ensure successful commercialization, we will finalize our plans for incorporation and fundraising.