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Photon emission detection to measure embryo vitality

The fundamental aim is to contribute to an increase in successful infertility treatment by increasing the effectiveness of artificial insemination techniques.

The Challenge

In IVF procedures, selecting the embryo with the highest implantation potential remains a major clinical challenge. Current embryo selection methods rely primarily on morphological assessment and time-lapse imaging, which require exposure to visible light. However, scientific evidence indicates that visible light, particularly blue wavelengths, can induce oxidative stress, DNA damage, and other adverse effects in embryos at a highly sensitive developmental stage. As a result, fertility clinics need a truly non-invasive, objective, and embryo-safe method to assess embryo viability without disturbing natural development.

The Solution

The technology introduces a novel embryo monitoring platform that measures the embryo's natural ultra-weak photon emission (UPE), a biological signal generated without any external stimulation. Using a highly sensitive single-photon detector integrated with an incubator, the system continuously records spontaneous photon emissions while embryos remain under optimal culture conditions and complete darkness. Advanced data analytics based on the proprietary EW-SFD algorithm converts these optical signals into objective indicators of embryo viability, enabling improved embryo selection without exposing embryos to potentially harmful light or chemical markers.

INVESTMENT HOOK

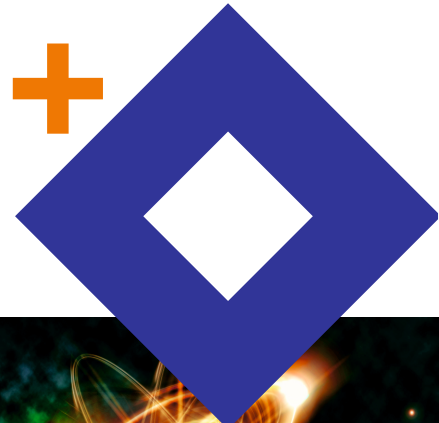
A breakthrough AI-enabled deep-tech platform for IVF clinics that transforms embryo selection from subjective visual assessment to objective, non-invasive biological viability measurement, potentially increasing IVF success rates while reducing the risks associated with multiple embryo transfer.

WHAT ARE WE LOOKING FOR?

Strategic partners, investors, and commercialization collaborators who can support the clinical validation, regulatory pathway, and market adoption of this next-generation embryo assessment technology.

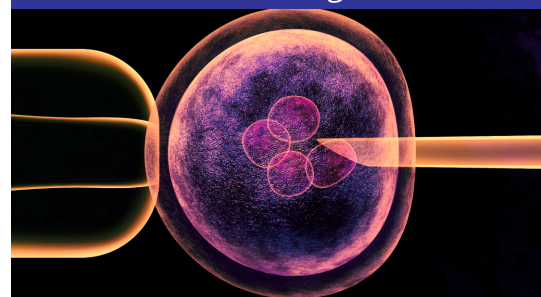


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Light-protected technologies increase the efficiency of IVF

Social demand for ART is steadily increasing



TRL 4
TECHNOLOGY
READINESS

USD 25-40 billion
Global
IVF diagnostics
market

Patent pending

National and international patent application are filed.

KEY VALUE PROPOSITION

Completely non-invasive embryo assessment
No external light stimulation required
Real-time monitoring of embryo viability
Objective, data-driven embryo selection
Reduced embryo stress during evaluation
Potentially higher implantation and pregnancy rates
Supports single-embryo transfer strategies
Compatible with existing IVF laboratory workflows
Proprietary viability biomarker (EW-SFD)
Strong IP position through patented hardware and analytics methodology

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