

# Blastoid

Supporting women's reproductive health

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"A unique drug discovery platform based on lab grown embryo surrogates for accelerated & efficient drug development for women's reproductive health and pregnancy management"

## Problem

- Fertility and pregnancy management is declared as a global health issue by WHO
- 15% of women have trouble conceiving naturally
- Existing treatments target hormones
- In vitro fertilization procedures are sub-optimal (<20% success per cycle)

**No rational way of novel drug discovery to treat fertility conditions or improve IVF**

## Solution

*A modular and scalable drug discovery platform using human stem cell based technologies that mimics events of early embryogenesis and pregnancy for accelerated and efficient drug development to treat fertility conditions and improve In vitro fertilization procedures (IVF).*

## Technology

### 1. Blastoids (Patent applied):

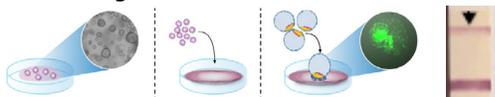
Blastoids are human stem cells derived structures which are remarkably similar to early human embryos at the stage called blastocyst. This is the precise stage at which embryos interact with the uterus to undergo a process called implantation. Defects in blastocysts may lead to implantation failure- a major cause for female infertility and underlies inefficiency in IVF. Blastoids provide unprecedented opportunity to develop novel drugs to enhance fertility and improve IVF outcomes.



**Blastoids: A model of human blastocyst solely formed from stem cells**

### 2. Implantation assay (Patent applied):

We have established a robust method using cells from outer lining of uterus to capture the embryo-uterus interactions during implantation. This provides a platform to discover new drugs to treat uterine conditions as well as to perform preclinical validations of drug candidates discovered using blastoids.



**Blastoids interact with uterine cells to mimic aspects of initiation of pregnancy in the lab**

## Current status

We have performed proof-of-concept 'miniscreens' with ~50 candidates on Blastoids and validated hits using implantation assay and identified 5 drug candidates to develop novel IVF embryo culture media for better IVF outcomes. These molecules will perform following key functions:

1. Embryo maturation (3 drug candidates; 2 patented)
2. Prevention of stress during embryo culture (2 drug candidates)

We have established partnership with IVF clinic across Europe for pre-clinical studies followed by clinical trials. In parallel, we are now preparing for first screen to identify drug candidates to regulate fertility.

## Revenue model

1. Partnership with IVF media manufacturers for the accelerated entry into the market
2. Drug candidates for fertility regulators: Licensing of candidates to pharmaceutical companies at preclinical phase.

## Team



### Nicolas Rivron, PhD

Co-founder, chairperson

*Nicolas is a group leader at IMBA- Institute of Molecular Biotechnology. He is a world leader in the field of embryo models who developed world's first 'synthetic embryos' solely from stem cells.*



### Alok Javali, PhD

Co-founder, CSO

*Alok is a senior scientist with more than 10 years of experience in the field of human stem cells and early embryonic development. He is a co-inventor of human blastoid technology.*



### Thomas Hoffmann, MBA

Business consultant

*Thomas is a serial entrepreneur who has developed several drug discovery and drug development start-ups for which he has successfully fundraised and overseen the successful exits of the firms.*