PRESS RELEASE

Eugin Group leads €3.5-million project to improve embryo implantation, a factor associated with over 30% of failed pregnancies

- **The Eugin Group, from its Basic Research Centre at the Barcelona Science Park, is leading a consortium of 15 public and private European institutions in the development of the IMPLANTEU project. This pioneering international research initiative has been awarded a grant of €3.5 million through the prestigious Marie Skłodowska-Curie Actions Doctoral Network to tackle one of the most critical challenges in fertility treatments, successful embryo implantation.**

- **A key aim of this initiative – which combines interdisciplinary expertise in biology, medicine, biotechnology, ethics, law and advanced technologies such as artificial intelligence and organs-on-chip – is to train the next generation of leading researchers in reproductive science, equipping them with the skills needed to revolutionise the scientific and clinical approach to infertility.**

- **Embryo implantation is a multifactor process that remains an unsolved problem in the scientific community due to the complexity of the mechanisms regulating how an embryo attaches to the uterine wall. This challenge takes on even greater importance as, according to the European Society of Human Reproduction and Embryology (ESHRE), over 30% of pregnancies fail due to problems with embryo implantation.**

Barcelona, 5 November 2024. A European consortium, led by the Eugin Group, has secured a €3.5-million grant from the European Commission through the prestigious Marie Skłodowska-Curie Actions Doctoral Network (MSCA-DN) to address one of the most critical challenges in infertility treatment: studying why embryo implantation fails, even after advanced medical treatments.

This crucial step is often limiting for many couples, as 30-70% of pregnancies (depending on the woman's age and whether the embryo presents chromosomal abnormalities) are unsuccessful due to failed implantation, according to data from ESHRE, the European Society of Human Reproduction and Embryology.

The desire to reverse this situation is what led to the creation of the IMPLANTEU project. Managed from the Eugin Group's Basic Research Centre in the Barcelona Science Park, the project seeks to revamp both reproductive science and clinical practice by adopting a comprehensive, multidisciplinary approach.

The European consortium developing the project comprises 15 public and private institutions, including universities, biotechnology start-ups and leading research institutions, among them: the Medical University of Graz (Austria), KU Leuven (Belgium), Ghent University (Belgium), Leiden University Medical Centre (Netherlands), University of Milan (Italy), University College Dublin (Ireland), University Medical Center Hamburg-Eppendorf (Germany), Institute of Molecular Biotechnology (Austria) and Universitat Politècnica de València (Spain).

Funded by the European Union

The findings generated through IMPLANTEU will mark the dawn of a new era in infertility treatment thanks to the multidisciplinary nature of the consortium members. They will combine their expertise in reproductive biology, biotechnology, bioengineering, medicine and physiology with cutting-edge technologies such as embryonic stem cell-based models, organoids, machine learning and organs-on-chip.

A new generation of leaders in reproductive medicine

A key aim of the IMPLANTEU project is to cultivate the next generation of leaders in reproductive science. To this end, the project has a training programme in place for young doctoral students, equipping them to make ~~a~~ significant contributions to the successful treatment of infertility.

Through stays in academic, scientific, and business environments, horizontal and specific courses, and interactions with consortium partners, students will not only gain experience in state-of-the-art research methods, but also develop skills in interdisciplinary collaboration, critical thinking, ethical and policy issues, and innovation.

"IMPLANTEU represents a transformative step in addressing the complexities of embryo implantation through cutting-edge science. It also reflects our commitment to advancing reproductive medicine by empowering the next generation of scientists to shape the future of our field", says **Dr. Mina Popovic**, project coordinator and scientific director of the Eugin Group.

"The Eugin Group is proud to lead IMPLANTEU, a project that fosters international collaboration, drives high-impact research and connects science with clinical care, offering hope to families around the world," says **Marcio Fernandes**, Eugin Group CEO.

Why do pregnancies fail?

One of the leading reasons pregnancies fail is a problem with implantation: the process by which an embryo attaches to the uterine wall. IMPLANTEU wants to explore the reasons behind these failures by studying both the embryonic and the uterine components at the molecular level. By gaining a deeper understanding of the factors that affect implantation success, the project aims to improve IVF success rates and offer more personalised treatments to couples facing fertility challenges.

Eugin Group's research team, led by **Dr. Popovic**, is coordinating the IMPLANTEU project from the Barcelona Science Park and seeks to address this challenge by delving into two key research areas: chromosomal abnormalities in embryos and genomic mapping of the endometrium.

"Many pregnancies fail due to chromosomal abnormalities in embryos, which become more common as women age, especially after 35. These abnormalities can lead to implantation failure, early pregnancy loss, often occurring before a woman is aware she is pregnant, or miscarriage", says **Dr. Popovic**. *"Our team is studying these issues in detail using lab-grown structures made from stem cells that mimic early-stage embryos. By observing how these abnormalities affect embryo development, we aim to better understand why some pregnancies fail, offering valuable insights that could improve fertility care in the future."*

Dr. **Irene Miguel-Escalada** leads the Eugin Group team's second area of research, genomic mapping of the endometrium. They will explore the genetic and molecular factors that affect how ready the uterus is to support a pregnancy. By identifying key molecular signals that show when the uterus is most receptive, the project aims to develop personalised fertility treatments that may improve the chances of a successful pregnancy.

■ About the Eugin Group

The Eugin Group has a network of assisted reproduction and fertility clinics located in several countries, backed by more than 25 years' experience. Since it opened in 1998 in Barcelona, the Group has been providing quality care for thousands of patients from all over the world.

The Eugin Group's basic research team was recognised with multiple prestigious awards in 2024 from the European Society of Human Reproduction and Embryology (ESHRE) and the Asociación para el Estudio de la Biología de la Reproducción (ASEBIR), for their innovative work on early human development and chromosomal abnormalities in embryos.

The Eugin Group has also been named one of the Nature Index 2024 Research Leaders, ranking among the top 100 leading corporate institutions for research contributions. The Nature Index is a globally respected measure of high-quality research, assessing the influence and collaboration of institutions worldwide. This prestigious recognition underscores Eugin's significant growth and impact, placing it alongside leading global players in the healthcare, pharmaceutical and biotech sectors.

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