Facilitating communication between embryo and endometrium
Cytokines: a critical role in communications

Cytokines drive the dialogue between the embryo and endometrium and are increasingly expressed throughout embryo development. The cytokine Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) is a natural signaling molecule that allows for both autocrine and paracrine communication between the embryo and endometrium.

Communication is key for a successful pregnancy

Communication between the embryo and endometrium is crucial in creating the right environment for a successful pregnancy. Compromised embryo competence, impacting the maternal-embryo dialogue, may lead to an increase in implantation failure, preclinical pregnancy loss and miscarriage.

Poor communication between embryo and endometrium may result in as much as:

- 40% of unexplained infertility
- 80% of unexplained pregnancy losses

Bring new hope to your patients with the EmbryoGen & BlastGen media suite

EmbryoGen and BlastGen form our novel culture media suite containing the cytokine GM-CSF. The inclusion of cytokines aims to reduce stress caused to the embryo by creating a more physiological in vitro environment, increasing the chances of a successful implantation.

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Which of my patients could benefit from EmbryoGen and BlastGen?

Beneficial to all patients, but recommended for women with:
- Recurrent clinical & biochemical pregnancy loss
- Recurrent implantation failure
- Unexplained infertility

References:
2. Adapted from The International Council on Infertility Information Dissemination, Inc. (INCIID), www.inciid.org
Providing a more physiological in vitro environment

The EmbryoGen and BlastGen media suite closely mimics the environment found in the female reproductive tract at conception. Creating the best possible in vitro conditions for the embryo, with the use of a cytokine, will promote successful implantation through improved endometrial receptivity.

Cytokines (e.g. GM-CSF)

Pre-implantation

Apposition, adhesion & trophoblast invasion

Implantation

Day 0-1
Fertilization

ORIGIO Sequential Fert™
is optimized to support sperm function and promote fertilization. It is recommended for gamete co-incubation before culture in EmbryoGen.

Day 1-3
Initial dialogue

Cytokines are critical in the communication between the embryo and the endometrium prior to implantation.

EmbryoGen contains GM-CSF, a cytokine found naturally in the female reproductive tract. Exposure of embryos to GM-CSF has been shown to promote blastocyst formation and alleviate the negative effects of in vitro culture.

Day 3-6
Ongoing support

Maternal-embryo communication is essential for recognition and implantation of the embryo.

BlastGen facilitates embryo culture through to the blastocyst stage with the added boost of GM-CSF. Also used for embryo transfer, BlastGen increases the presence of GM-CSF in the reproductive tract just prior to implantation.

From embryo transfer onwards
Sustained dialogue

An environment that supports the dialogue between the embryo and endometrium is crucial for successful implantation, especially for women with repeated IVF failures.

ORIGIO Sequential Fert™

**Embro**Gen and **BlastGen** in the clinical setting

The introduction of a GM-CSF containing culture medium to the IVF world was based on the positive results of **Embro**Gen in a prospective randomized clinical trial\(^1\), which showed its positive effect on ongoing implantation and live birth rates.

3 days of embryo culture in GM-CSF containing medium improved live birth rate\(^1\)

<table>
<thead>
<tr>
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<th>Pregnancy Rate</th>
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<th>Live Birth Rate</th>
</tr>
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31% increase in live birth rate \(p=0.01\)

Today early data on the clinical use of the full GM-CSF media suite, **Embro**Gen and **BlastGen**, demonstrates that culturing in GM-CSF containing media until the blastocyst stage increases pregnancy and implantation rates\(^1\).

**Embro**Gen and **BlastGen** have a positive effect on pregnancy rate and increase the chances of obtaining a live birth\(^1\)

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44% increase in ongoing implantation rate

**Make Embro**Gen and **BlastGen** part of your toolbox

- Embryo-endometrial communication is key to successful pregnancy
- Cytokines drive communication
- **Embro**Gen and **BlastGen** make up the first media suite containing the recombinant human GM-CSF cytokine
- **Embro**Gen and **BlastGen** have a positive effect on embryo transfer success rates

Definitions

- **Pregnancy rate**: Women with positive hCG at week 2 per women with transfer. Implantation rate: Number of sacs at week 7 per transferred embryo. Ongoing implantation rate: Number of sacs with heart beat at week 7 per transferred embryo. Live birth rate: Live births per transferred embryo.

References

2. ORIGIO®, data on file

\(^1\) ORIGIO®, data on file
Train with ORIGIO and optimize your performance, learn new skills and network with international peers

Since 2011, we have invited customers and partners to learn new techniques and share best practices in our fully equipped laboratory.

At the ORIGIO Training Labs we provide evidence-based training by skilled, experienced embryologists which includes demonstrations and hands-on training in a comprehensive range of Assisted Reproductive Technologies (ART) and culture media processes.

For further details and to book places visit www.origio.com

Sales & distribution availability of products will vary across markets.

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