



EmbryoGen[®] & BlastGen[™]

Unique culture media for
poor prognosis patients



ORIGIO • SAGE • Humagen • TPC • K-Systems • RI • Wallace • LifeGlobal • CooperGenomics

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%

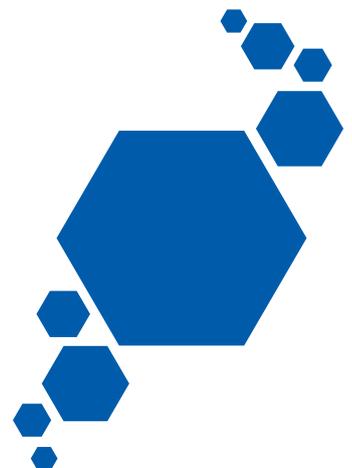
of unexplained infertility^{1,2}

80%

of unexplained
pregnancy losses^{1,2}

Cytokines: a critical role in communications

Cytokines drive the dialogue between the embryo and endometrium and are increasingly expressed throughout embryo development.³ 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.



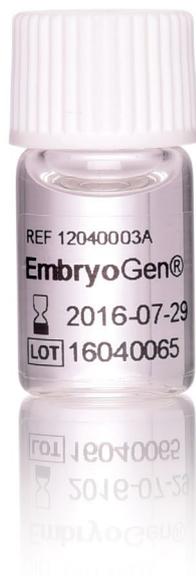
1. Roussev *et al.* Laboratory Evaluation of Women Experiencing Reproductive Failure, *Am. J. Reprod. Immunol.*, 1996; 35:415-420

2. Adapted from The International Council on Infertility Information Dissemination, Inc. (INCIID), www.inciid.org

3. Zhao, Y. and Chegini, N. (1999). The expression of granulocyte-macrophage colony-stimulating factor (GM-CSF) and receptors in human endometrium. *Am. J. Reprod. Immunol.* 42, 303-311.

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.



CE 0543

EmbryoGen

The world's first culture medium for cleavage-stage embryos containing the recombinant human GM-CSF cytokine

BlastGen

The world's first culture medium for blastocyst-stage embryos containing the recombinant human GM-CSF cytokine

Which of my patients could benefit from EmbryoGen and BlastGen?

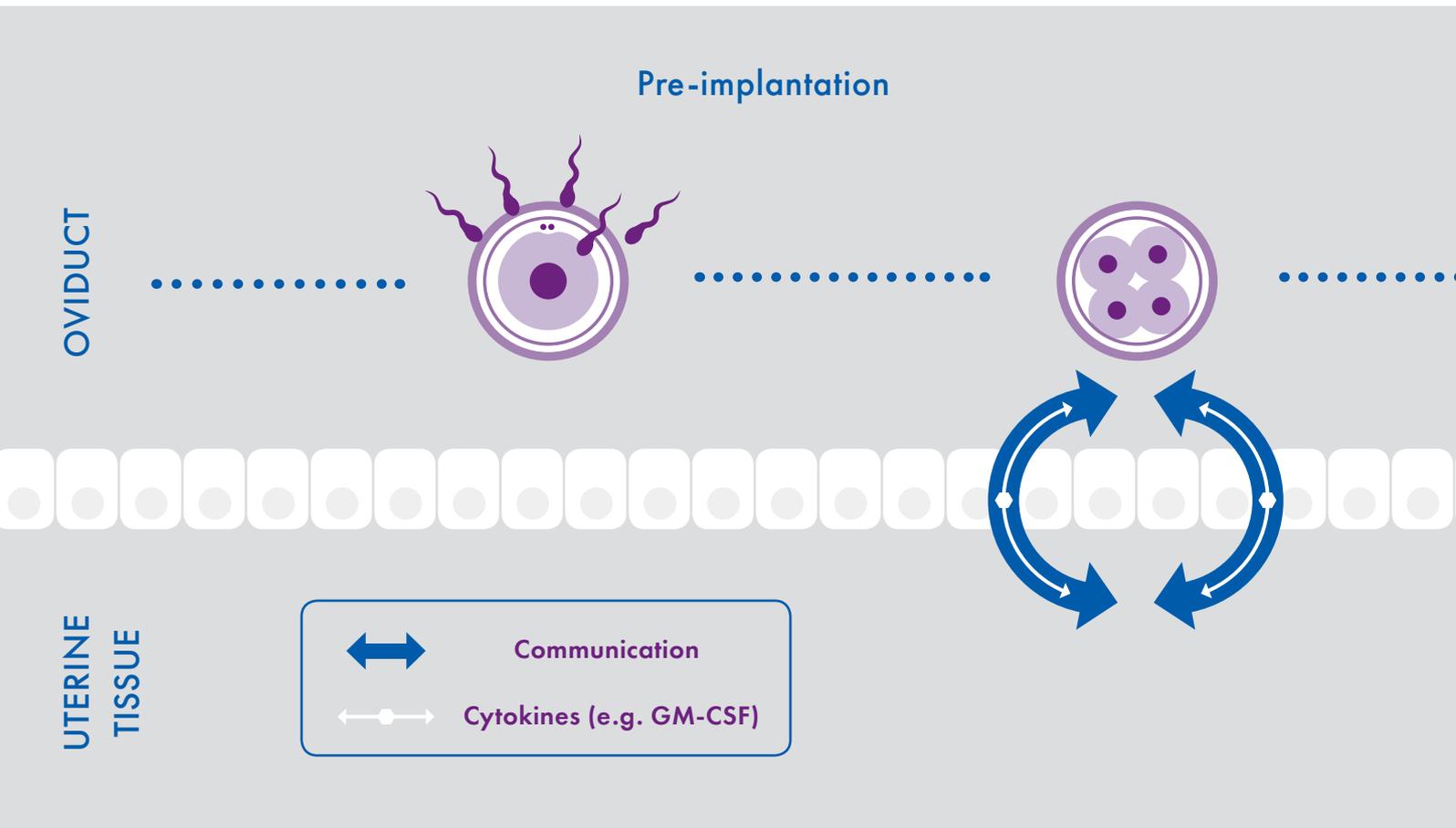
Beneficial to all patients, but recommended for women with¹:

- Recurrent clinical & biochemical pregnancy loss
- Recurrent implantation failure
- Unexplained infertility

1. Ziebe et al., A randomized clinical trial to evaluate the effect of granulocyte-macrophage colony-stimulating factor (GM-CSF) in embryo culture medium for in vitro fertilization. Fertil Steril. 2013 May;99(6):1600-9.

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.



LAB

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 1-3¹ 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.

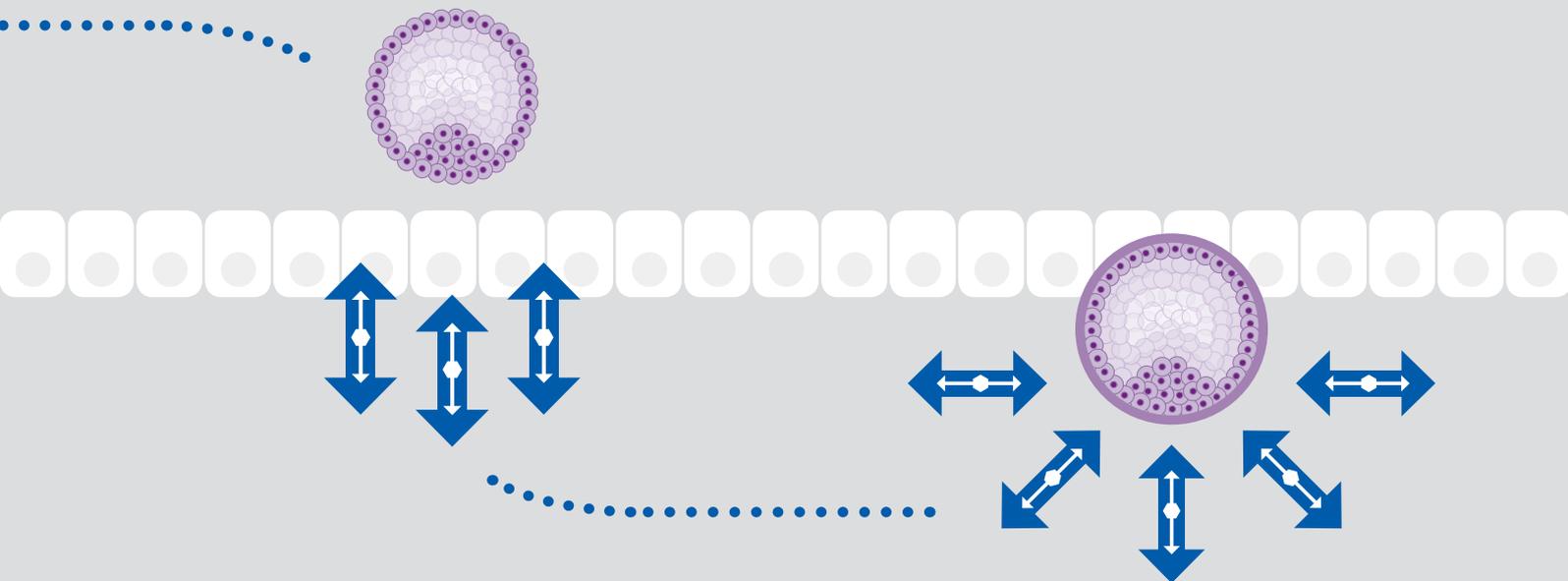


1. For ICSI move to EmbryoGen® on day 0



Apposition, adhesion & trophoblast invasion

Implantation



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 failures¹.

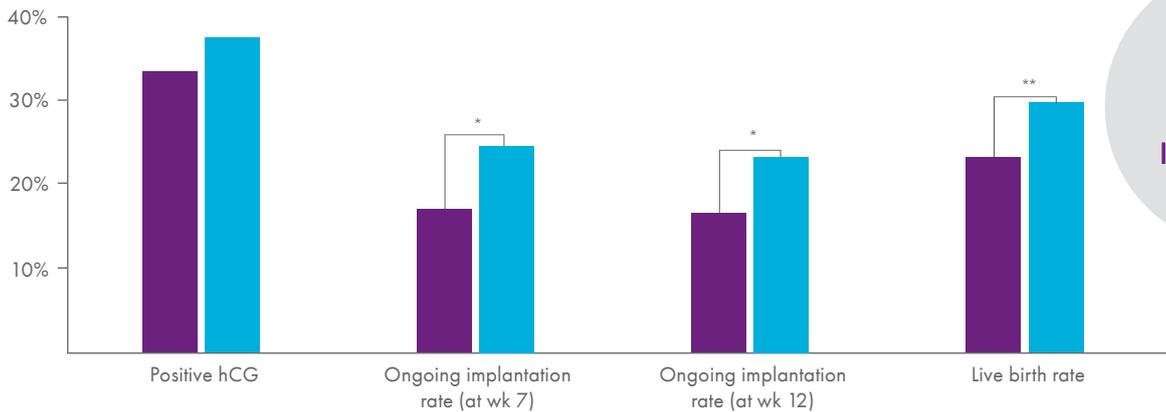
Transferring using **BlastGen** ensures that GM-CSF is present in the reproductive tract at the time of implantation. This cytokine is known to play an important role in the regulation of the mother's immune response and can facilitate implantation.

1. Ziebe et al., A randomized clinical trial to evaluate the effect of granulocyte-macrophage colony-stimulating factor (GM-CSF) in embryo culture medium for in vitro fertilization. *Fertil Steril.* 2013 May;99(6):1600-9.

EmbryoGen 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 **EmbryoGen** in a prospective randomized clinical trial¹, which showed its positive effect on ongoing implantation and live birth rates.

3 days of embryo culture in EmbryoGen improved live birth rate¹



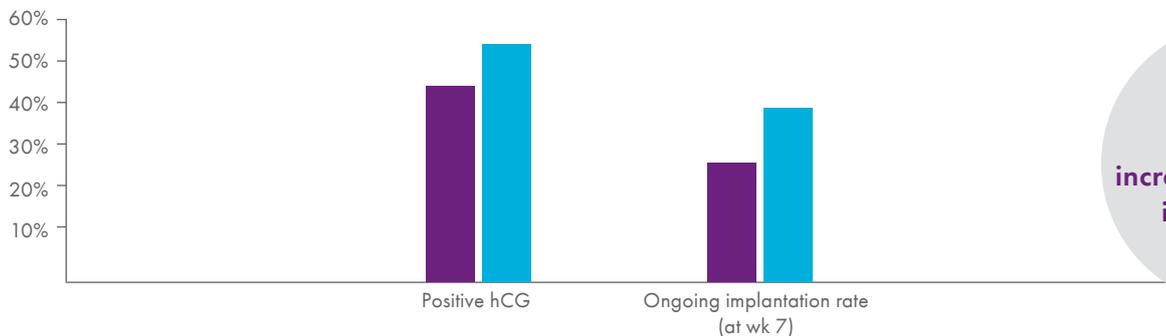
28%
increase in live birth rate

Subgroup analysis for previous miscarriage patients (n=289 embryo transfer cycles) from a multi-center, randomized, controlled parallel group, double blinded trial with 1,300+ patients from 14 centers. *P<0.01; **P<0.05

■ Standard IVF Treatment ■ EmbryoGen

Today early data on the clinical use of the full GM-CSF media suite, **EmbryoGen** and **BlastGen**, demonstrates that culturing in GM-CSF containing media until the blastocyst stage increases pregnancy and implantation rates².

EmbryoGen and BlastGen have a positive effect on pregnancy rate and increase the chances of obtaining a live birth²



44%
increase in ongoing implantation rate

Subgroup analysis for frozen-thawed blastocysts (n=93 single blastocyst transfer cycles) from a single-center, pilot study of randomized sibling zygotes.

■ Standard IVF Treatment ■ EmbryoGen & BlastGen

Definitions

Ongoing implantation rate: Number of sacs with heart beat per transferred embryo. Live birth rate: Live births per transferred embryo.

1. Ziebe et al., A randomized clinical trial to evaluate the effect of granulocyte-macrophage colony-stimulating factor (GM-CSF) in embryo culture medium for *in vitro* fertilization. *Fertil Steril.* 2013 May;99(6):1600-9.

2. CooperSurgical, data on file

Make **EmbryoGen** and **BlastGen** part of your toolbox

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

44%

increase in ongoing implantation rate with **EmbryoGen** and **BlastGen**¹

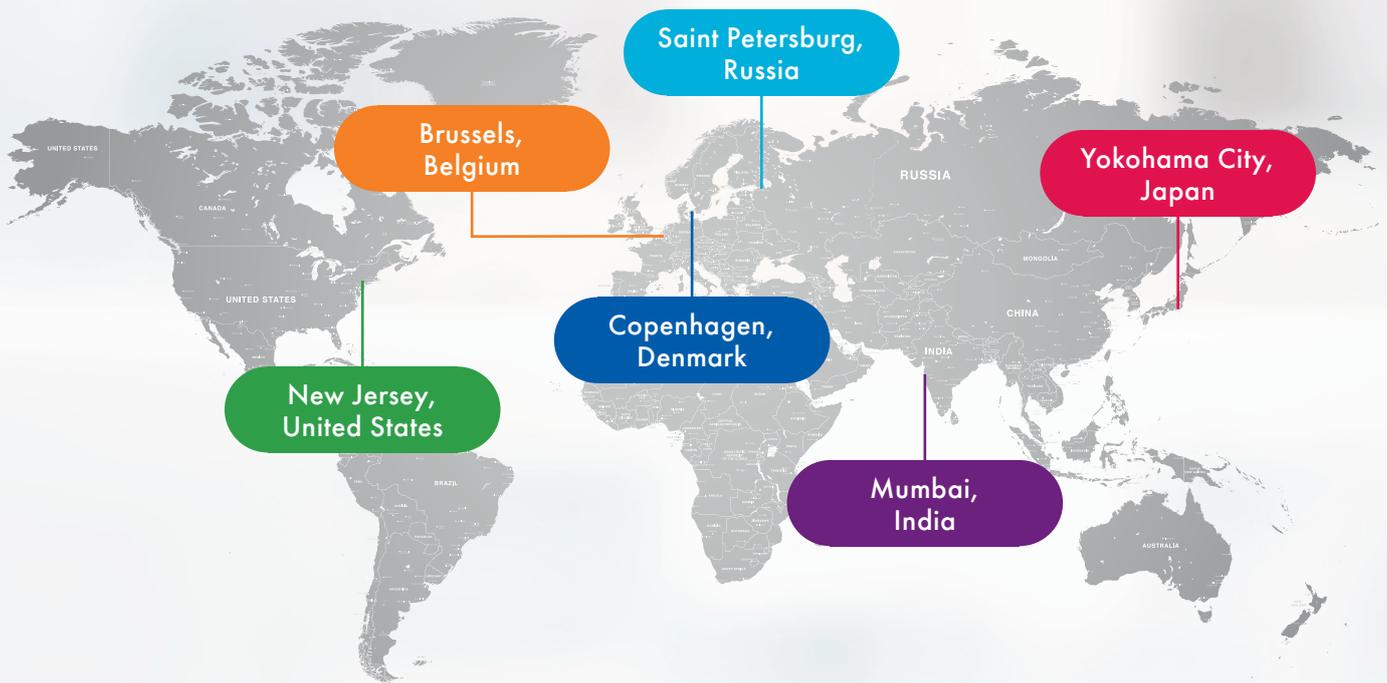


1. CooperSurgical, data on file

Train with CooperSurgical and optimize your performance, learn new skills and network with international peers.

We invite customers and partners to learn new techniques and share best practices in our fully equipped laboratories.

We provide evidence-based training by skilled, experienced embryologists which includes demonstrations and hands-on training in a comprehensive range of ART techniques and procedures.



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