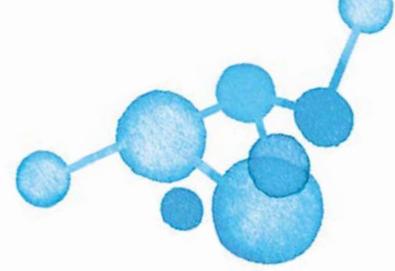


Quality products from ORIGIO®,  
SAGE™ and LifeGlobal®



# A Unique Culture Media Portfolio



CooperSurgical®  
Fertility Solutions

# Quality media for every step of the ART journey

## A range of high-quality culture media

CooperSurgical Fertility Solutions is a market leader in ART media with a strong heritage provided by its three media brands ORIGIO, SAGE and LifeGlobal.

We bring these three well-established brands together under the unifying philosophy of our culture portfolio, which is to support you in maximizing success rates in your clinic by developing and manufacturing ART media of the highest quality.

## Quality you can rely on

Our certified, state-of-the-art production facilities follow the highest quality and regulatory standards to ensure consistent quality and low batch-to-batch variation. We listen to customer insights and work closely with industry experts around the world to ensure that our media can support your preferred protocol, whatever that may be.

## ART culture media for most preferences

CooperSurgical provides media for every step of the ART journey, including oocyte retrieval, andrology, fertilization, embryo culture and biopsy, and cryopreservation. Our diverse range of media supports us with meeting different needs or preferences.

Benefiting from the strength of our three brands, we are able to offer embryo culture media for both continuous and sequential systems, with options available for various protein preferences. No matter which brand you choose, you can trust that our media have been specifically designed to support optimal development of embryos.



# Delivering balance

## The integral role of culture media in ART

The primary role of a culture system is to provide an environment that minimizes stresses to gametes and embryos *in vitro*. By delivering a balance of ions, energy substrates and nutrients, media are essential in optimizing clinical outcomes in the ART lab.

Culture systems are highly sensitive to the external environment and influenced by many factors, including air quality, environmental control, CO<sub>2</sub> and pH levels, as well as the laboratory staff's level of expertise. As variations in any of these parameters can affect clinical outcomes, creating and maintaining the optimal environment is key to a well-functioning culture system.

## Partnering beyond products

We collaborate with clinics and experts worldwide to create a global network of scientific leaders, embryologists and clinical training experts. By partnering with us you become part of this network, and benefit from the knowledge, training and product solutions our leading specialists are able to provide.

Our team of experienced embryologists help support customers with the establishment of clinics (turn-key projects), laboratory design, and lab performance. In addition, they give lectures, run seminars and workshops, and support the research and development of new products.

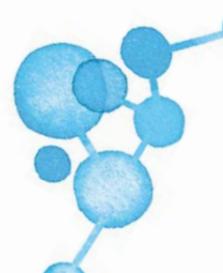
## Clinical Application Specialists

Our clinical application service allows you to partner with experts from the CooperSurgical Clinical Support team. As Clinical Application Specialists, our expert team can support with:

See our website for information on training

- ✓ Support laboratory workflow
- ✓ Troubleshooting
- ✓ pH testing
- ✓ Support laboratory design
- ✓ Setting up media evaluations
- ✓ And much more

All with the aim of improving your success rates.



# Collection & manipulation media

## Optimize physical and chemical conditions

Optimized retrieval and handling media from CooperSurgical are designed to be pH stable and provide optimal physical and chemical conditions for human gametes and embryos during *in vitro* ART procedures taking place outside the CO<sub>2</sub> incubator.

In order to work with different culture media suites, and minimize osmolality and pH shifts, CooperSurgical offers a range of different oocyte retrieval and handling media. All of our media are HEPES buffered, however, the ORIGIO Handling medium has the added advantage of being dual HEPES/MOPS buffered providing optimized external pH buffer capacity. Our media range has multiple protein options.

### Protein Options

- Protein Free
- HSA 5 mg/ml



# Fertilization media

## Minimize stress and support optimal fertilization

Fertilization media from CooperSurgical can be used for conventional *in vitro* fertilization or ICSI, and are designed to support both gametes during fertilization, as well as promote sperm function.

Each medium shares a base formulation with the equivalent culture media series to minimize stress and support optimal fertilization. Our media range has multiple protein options.

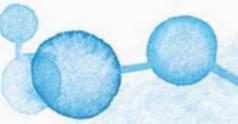
### Protein Options

- Protein Free
- HSA 3 mg/ml
- HSA 5 mg/ml



global® total® LP for Fertilization

global® for Fertilization



# Culture media

## Single-step embryo culture media

Single-step media are designed to provide the embryo with the nutrients needed for uninterrupted culture right through to the blastocyst stage. Clinical evidence suggests that single-step media is equal to sequential media in its ability to support embryogenesis.<sup>1,2,3</sup>

Our unrivaled culture media range includes global®, the original single-step, protein-free medium from the LifeGlobal brand. With performance demonstrated through 15 years of use and several independent publications, it is used as the base for all our LifeGlobal ready-to-use culture media.

We also offer SAGE 1-Step™, a ready-to-use culture medium containing hyaluronan (HA) in addition to HSA. The addition of HA has been shown to promote embryo development and cryo survival<sup>4</sup> as well as increase implantation and clinical pregnancy rates.<sup>4,5,6</sup>



## Sequential embryo culture media

Our sequential media systems use stage-specific formulations that aim to mimic the environment an embryo would encounter *in vivo* and support the changing metabolic and physiological needs at each phase.

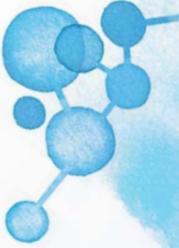
Developed and inspired by peer-reviewed research, the ORIGIO Sequential Series is formulated with differing concentrations of vitamins and amino acids to optimize cellular function and reduce embryonic stress. Hyaluronan is also included to promote embryo development and cryosurvival<sup>4</sup> and improve implantation and clinical pregnancy rates.<sup>4,5,6</sup>

Our sequential culture media range has multiple protein options.



### Protein Options

- Protein Free
- HSA 5 mg/ml



1. Summers MC, et al. Human preimplantation embryo development in vitro: a morphological assessment of sibling zygotes cultured in a single medium or in sequential media. Human Fertility. 2013;16:278-285  
 2. Hardarson T, et al. Noninferiority, randomized, controlled trial comparing embryo development using media developed for sequential or undisturbed culture in a time-lapse setup. Fertil Steril. 2015;104:1452-1459  
 3. Dieamant F, et al. Single versus sequential culture medium: which is better at improving ongoing pregnancy rates? A systematic review and meta-analysis. JBRA Assist Reprod. 2017;21:240-246

4. Lane M, Gardner D. Embryo culture medium: which is the best? Best Res Clin Obstet Gyn. 2007;21:83-100  
 5. Urman B, et al. Effect of hyaluronan-enriched transfer medium on implantation and pregnancy rates after day 3 and day 5 embryo transfers: a prospective randomized study. Fertil Steril. 2008;90:604-612  
 6. Bontekoe S, Johnson N, Blake D. Adherence compounds in embryo transfer media for assisted reproductive technologies. Cochrane Database of Systematic Reviews. 2014;2:Art. No.: CD007421.

# Culture media with GM-CSF

Protein Options

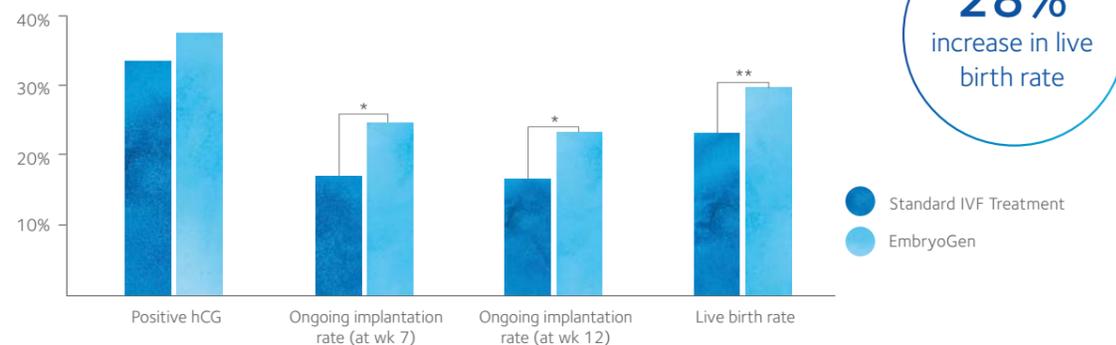
● HSA 5 mg/ml

## Increasing the chances of a successful implantation<sup>1,2</sup>

EmbryoGen® and BlastGen™ make up our novel culture media suite supplemented with the recombinant human cytokine granulocyte-macrophage colony-stimulating factor (GM-CSF). The inclusion of this cytokine aims to reduce embryonic stress by creating a more physiological *in vitro* environment, increasing the chances of a successful implantation.

Studies have shown that culturing embryos in media containing GM-CSF improves implantation, pregnancy and live birth rates.<sup>1,2</sup>

### 3 days of embryo culture in EmbryoGen improved live birth rate<sup>1</sup>

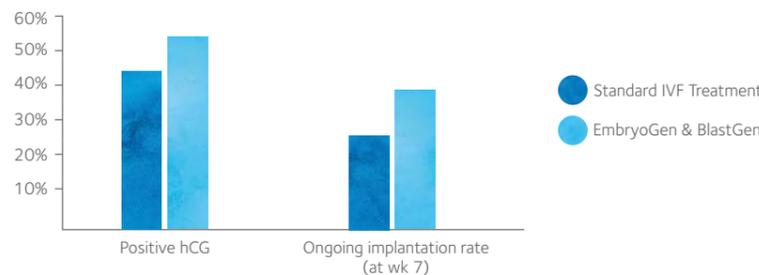


**28%**  
increase in live birth rate

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

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 rates.<sup>2</sup>

### EmbryoGen and BlastGen have a positive effect on pregnancy rate and increase the chances of obtaining a live birth<sup>2</sup>



**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.

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

## Create a more physiological culture environment

GM-CSF is naturally produced and secreted from the human oviductal and endometrial epithelium<sup>3,4</sup> with levels peaking during the secretory phase of the menstrual cycle.<sup>4,5</sup>

This coincides with the time of conception and implantation.

- GM-CSF reduces embryonic stress and facilitates communication between embryo and endometrium<sup>6</sup>
- A significant positive correlation between clinical pregnancy rate and the level of GM-CSF secreted by the endometrial cells has been shown in patients with recurrent implantation failure (RIF)<sup>7</sup>
- Culturing embryos in recombinant GM-CSF has been shown to improve ongoing implantation and live birth rates for patients with a history of miscarriage and RIF<sup>1,8</sup>

Our unique culture media suite for poor prognosis patients provides options for both single-step and sequential protocols.



1. Ziebe S, 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. Fertil Steril. 2013;99:1600-1609  
 2. CooperSurgical, data on file  
 3. Zhao Y & Chegini N. Human fallopian tube expresses granulocyte-macrophage colony stimulating factor (GM-CSF) and GM-CSF alpha and beta receptors and contain immunoreactive GM-CSF protein. J Clin Endocrinol Metab 1994;79:662-665  
 4. Giacomini G, et al. Epithelial cells are the major source of biologically active granulocyte macrophage colony-stimulating factor in human endometrium. Hum R eprod. 1995;10:3259-3263

5. Zhao Y & Chegini M. The expression of granulocyte macrophage-colony stimulating factor (GM-CSF) and receptors in human endometrium. Am J R eprod Immunol. 1999;42:303-311  
 6. Chin PY, et al. Stress response genes are suppressed in mouse preimplantation embryos by granulocyte-macrophage colony-stimulating factor (GM-CSF). Human Reproduction. 2009;24:2997-3009  
 7. Spandorfer SD, et al. Granulocyte macrophage-colony stimulating factor production by autologous endometrial co-culture is associated with outcome for in vitro fertilization patients with a history of multiple implantation failures. Am J Reprod Immunol. 1998;40:377-381  
 8. Tevkin S, et al. The frequency of clinical pregnancy and implantation rate after cultivation of embryos in a medium with granulocyte macrophage colony-stimulating factor (GM-CSF) in patients with preceding failed attempts of ART. Gynecol Endocrinol. 2014;30(suppl1):9-12

# Train with us

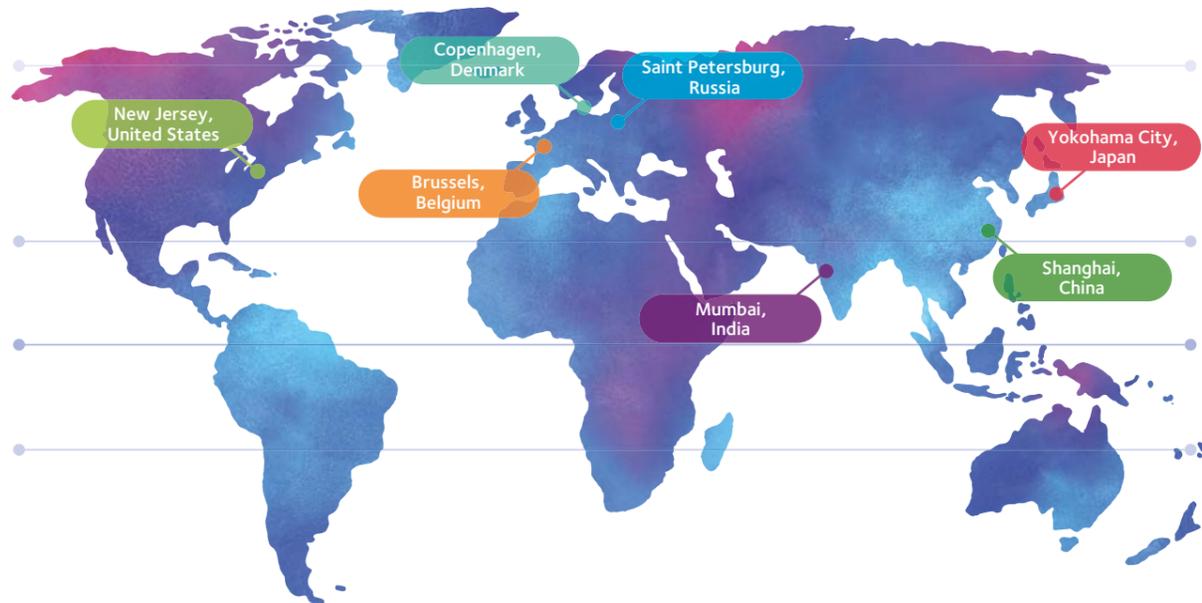
## Training program

CooperSurgical Fertility Solutions provides global hands-on training courses for a comprehensive range of Genomic and Assisted Reproductive Technologies.

All of our training centers are fully equipped to support expert tuition, laboratory demonstrations, peer to peer discussions, and the sharing of best practice in a professional yet relaxed atmosphere. Our courses focus on providing evidence-based training by skilled, experienced embryologists in specific topics such as embryo culture, vitrification, sperm selection, biopsy and cell preparation.

If you or your staff could benefit from training, see our website [fertility.coopersurgical.com/training-lab](http://fertility.coopersurgical.com/training-lab) for more information, course schedule and bookings.

### Training course locations



## Workshops

As well as our training lab courses we also run regular hands-on workshops around the globe. To find out about events coming up in your region, contact your local CooperSurgical representative.

# Product code overview

Collection & Manipulation	Description		(ml)	Product Code	
ORIGIO® Handling™	HEPES / MOPS	● ✕	60	83100060	
ORIGIO® Handling™	HEPES / MOPS	● ✕	125	83100125	
ORIGIO® Handling™	HEPES / MOPS	● ●	60	83110060	
ORIGIO® Handling™	HEPES / MOPS	● ●	125	83110125	
ORIGIO Flushing Medium	HEPES	● ●	125	10760125	26 W
ORIGIO Flushing Medium	HEPES	● ●	300	10765060	
ORIGIO Flushing Medium	HEPES	● ●	125	10840125	
ORIGIO Flushing Medium	HEPES	● ●	300	10845060	
SynVibro® Flush	HEPES	● ✕	125	15760125	
SynVibro® Flush	HEPES	● ✕	125	15840125	
Quinn's Advantage Medium w/ HEPES	HEPES	● ●	100	ART-1023	52 W
Quinn's Advantage Medium w/ HEPES	HEPES	● ●	500	ART-1024	
global® Collect®	HEPES	● ●	100	GCOL-100	
global® Collect®	HEPES	● ●	500	GCOL-500	
global® w/ HEPES	HEPES	● ●	50	LGGH-050	
global® w/ HEPES	HEPES	● ●	100	LGGH-100	
global® w/ HEPES	HEPES	● ●	250	LGGH-250	10 W
global® w/ HEPES	HEPES	● ●	500	LGGH-500	
global® total® LP w/ HEPES	HEPES	● ●	20	H5TH-020	
global® total® LP w/ HEPES	HEPES	● ●	50	H5TH-050	
global® total® LP w/ HEPES	HEPES	● ●	100	H5TH-100	
global® total® LP w/ HEPES	HEPES	● ●	250	H5TH-250	

Protein Supplement	(ml)	Product Code	
Human Albumin	60	ART-3001	
Human Albumin	100	ART-3003	52 W
HSA	60	GHSA-125	

### Protein Options

- Protein Free
- HSA 3 mg/ml
- HSA 5 mg/ml
- with phenol red
- ✕ without phenol red
- ⌚ Shelf life (in weeks)

# Product code overview

Fertilization		(ml)	Product Code
Universal IVF Medium	● ●	60	10310060
Universal IVF Medium	● ●	100	10311010
Universal IVF Medium	● ●	300	10315060
Universal IVF Medium	● ✖	60	10300060
Universal IVF Medium	● ✖	100	10301010
Universal IVF Medium	● ✖	300	10305060
ORIGIO® Sequential Fert™	● ✖	10	83010010
ORIGIO® Sequential Fert™	● ✖	60	83010060
ORIGIO® Sequential Fert™	● ●	10	83020010
ORIGIO® Sequential Fert™	● ●	60	83020060
Quinn's Advantage™ Protein Plus Fert Medium	● ●	20	ART-1520
Quinn's Advantage™ Fertilization (HTF) Medium	● ●	50	ART-1020
Quinn's Advantage™ Fertilization (HTF) Medium	● ●	100	ART-1021
global® for Fertilization	● ●	20	LGGF-020
global® for Fertilization	● ●	50	LGGF-050
global® for Fertilization	● ●	100	LGGF-100
global® for Fertilization	● ●	500	LGGF-500
global® total® LP for Fertilization	● ●	10	H5TF-010
global® total® LP for Fertilization	● ●	20	H5TF-020
global® total® LP for Fertilization	● ●	50	H5TF-050
global® total® LP for Fertilization	● ●	100	H5TF-100



Single Step Culture	Description	(ml)	Product Code
SAGE 1-Step™	Hyaluronan	10	67020010
SAGE 1-Step™	Hyaluronan	60	67020060
global®		20	LGGG-020
global®		50	LGGG-050
global®		100	LGGG-100
global® total® LP		10	H5GT-010
global® total® LP		30	H5GT-030
global® total® LP		60	H5GT-060
global® total® LP		100	H5GT-100



Sequential Culture	Description	(ml)	Product Code
ORIGIO® Sequential Cleav™	Hyaluronan	10	83030010
ORIGIO® Sequential Cleav™	Hyaluronan	60	83030060
ORIGIO® Sequential Cleav™	Hyaluronan	10	83040010
ORIGIO® Sequential Cleav™	Hyaluronan	60	83040060
Quinn's Advantage Cleavage Medium		20	ART-1026
Quinn's Advantage Cleavage Medium		50	ART-1027
ORIGIO® Sequential Blast™	Hyaluronan	10	83050010
ORIGIO® Sequential Blast™	Hyaluronan	30	83050060
ORIGIO® Sequential Blast™	Hyaluronan	60	83060010
ORIGIO® Sequential Blast™	Hyaluronan	100	83060060



Culture Media with GM-CSF	Description	(ml)	Product Code
EmbryoGen®	GM-CSF	3	12040003
BlastGen™	GM-CSF	3	12050003
EmbryoGen® & BlastGen™	GM-CSF	6	12062003



## Protein Options

- Protein Free
- HSA 3 mg/ml
- HSA 5 mg/ml
- with phenol red
- ✖ without phenol red
- ⌚ Shelf life (in weeks)

# A solution as unique as your business

At CooperSurgical, we partner with you to drive clinical efficiency

When you partner with CooperSurgical you become part of a truly global network of clinical experts ready to support you with highly specialized solutions, both for individual clinics and across large organizations. By providing you with optimal products, services and training, our aim is to offer you the best possible support to drive the efficiency of your clinic and achieve the best results.

