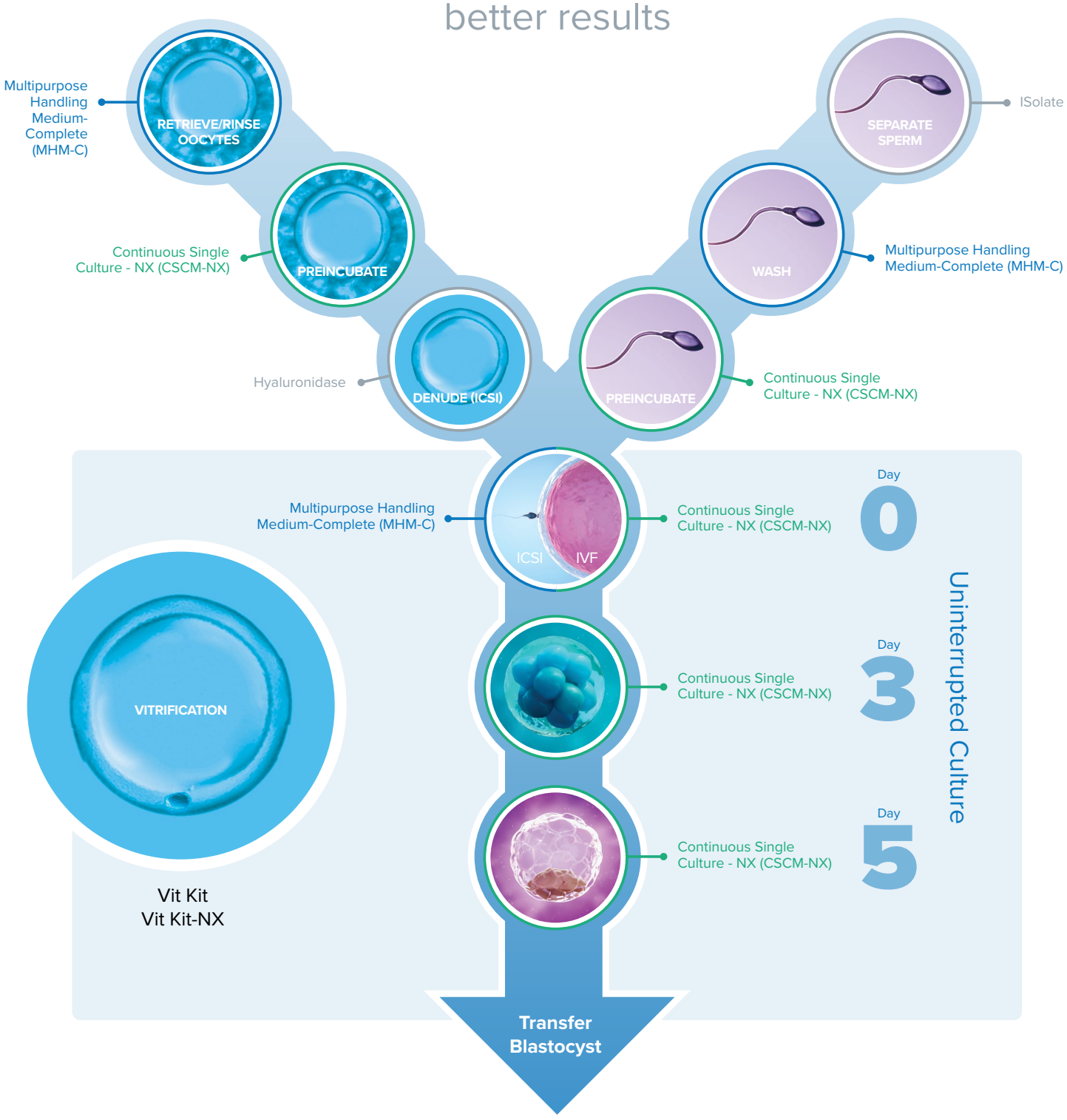
FUJIFILM
Value from Innovation

From Gametes to Blastocysts

SIMPLER PROCESSES. LESS STRESS. BETTER RESULTS.

Help at Every Step

Simpler processes, less stress, and better results



Leading The Way to Greater Workflow Efficiency and Increased Pregnancy Rates

FUJIFILM Irvine Scientific has been a well-recognized supplier of innovative media solutions and lab supplies to the ART community for over 35 years.

Media solutions, such as ISolate for sperm preparation and Freezing Medium TYB for cryopreservation, have set industry standards in the field of andrology.

FUJIFILM Irvine Scientific pioneered both the use of vitrification to increase survival rates of cryopreserved oocytes and embryos with Vit Kit and Vit Kit-NX, and the use of low lactate in Continuous Single Culture-NX, a clinically proven, single-step culture medium that helps maintain efficient metabolic rates by eliminating unnecessary stress.

Today, with a new generation of optimized, multi-use media, Multipurpose Handling Medium and Continuous Single Culture, FUJIFILM Irvine Scientific continues to increase workflow efficiency and contribute to successful pregnancies in clinics throughout the world.

From Gametes to Blastocysts

- Help to improve workflow efficiency and clinical outcomes in a fully integrated workflow
- Reduce stress on the embryo and the embryologist
- Handle gametes and embryos in a stable environment
- Enhance performance with high quality products

Learn about the latest FUJIFILM Irvine Scientific solutions for reproductive technologies in our brochures:

- From gametes to blastocysts
- Vitrification of oocytes and embryos
- Sperm preparation, handling, and storage

Visit our website at **www.irvinesci.com**

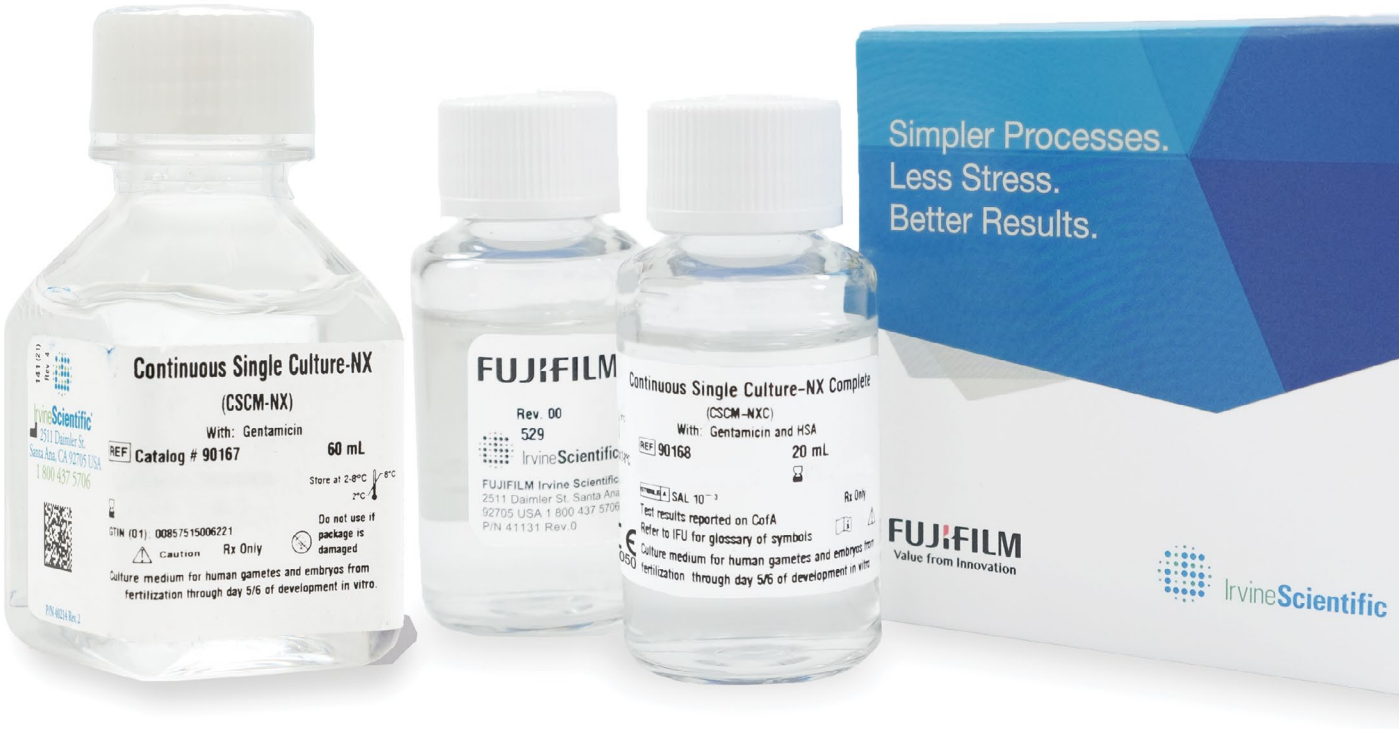
Peace of Mind at Every Step

FUJIFILM Irvine Scientific was the first ART manufacturing company in the USA to receive ISO 13485:2016 quality system certification, the rigorous international quality assurance standard designed specifically for Medical Devices. Every FUJIFILM Irvine Scientific product is subject to a stringent Quality System, unrivaled in the industry, and produced in well-established, cGMP compliant facilities.

One Medium for Optimal Culture Outcomes

CSCM-NX provides an optimal environment for oocyte and embryo development by eliminating unnecessary stress when introduced at Day 0.

- **A low lactate culture medium keeps metabolic rates efficient and improves blastocyst utilization rates when used from oocyte identification through the blastocyst stage**
- **Minimize embryo disturbances**
  - No dish changes
  - Reduce pH fluctuations
  - Reduce exposure to varying culture conditions
- **Save on laboratory supplies**
  - Reduce media usage – no medium changes
  - Fewer dishes and medium preparation steps
- **Skip the protein supplementation step with Continuous Single Culture-NX Complete (CSCM-NXC)**
  - Contains 5 mg/mL of Human Serum Albumin (HSA)

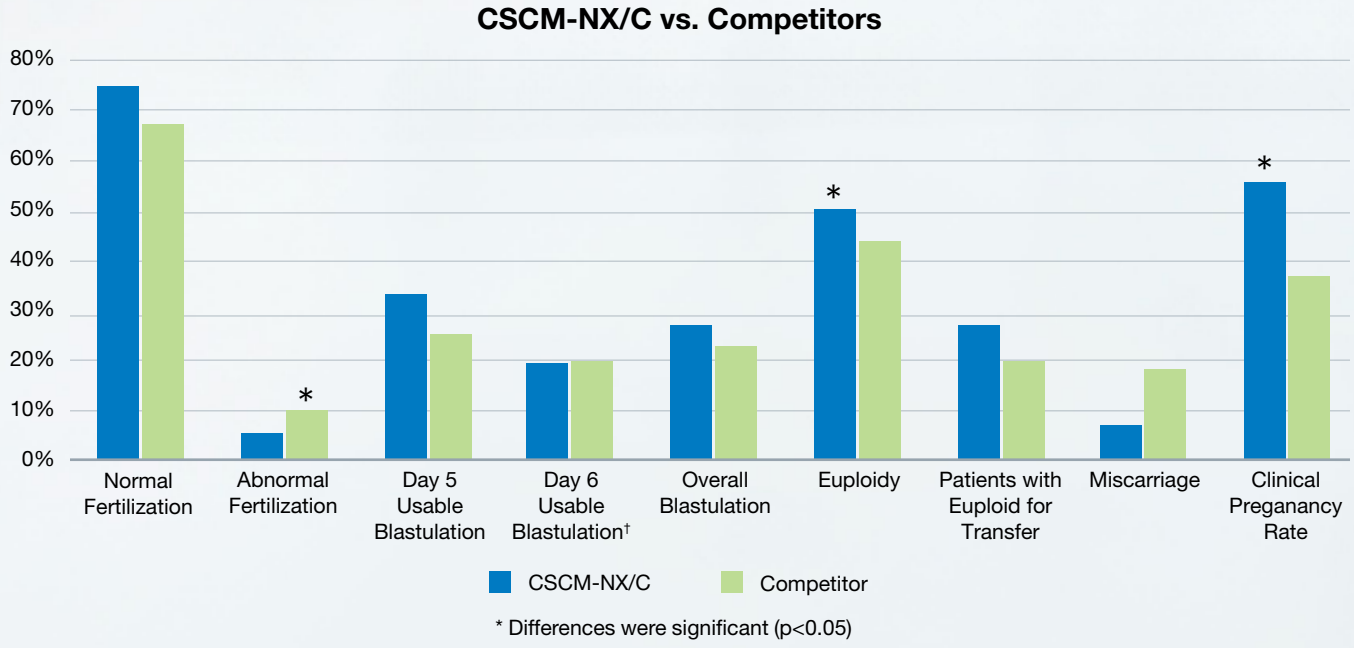


Better Results Start at Day 0

Studies show that when labs follow the Day 0 workflow with CSCM-NX, they see significant improvements in embryo culture outcomes.

- Overall higher Day 5 and 6 blastocyst utilization rate (BUR), even when accounting for patient age[1,2]
- Increase BUR in patient population >38 years old[3]
- Higher euploidy rate than CSCM[4]
- Improvement in clinical pregnancy and reduction in miscarriage rates[5]
- Increase in higher expansion grade blastocysts[6]
- Improved trophectoderm and inner cell mass grades[6]
- Reduced embryo discards[6]

1 Benini F (2022)
2 Manzo R (2022)
3 Hammond E, et al. (2020)
4 Whitney JB (2022)
5 Kobanawa M (2022)
6 Moreno Moya JM (2022)



* Differences were significant ($p<0.05$)

† More usable blasts in traditional media on Day 6 due to higher BUR on Day 5 in low lactate media.

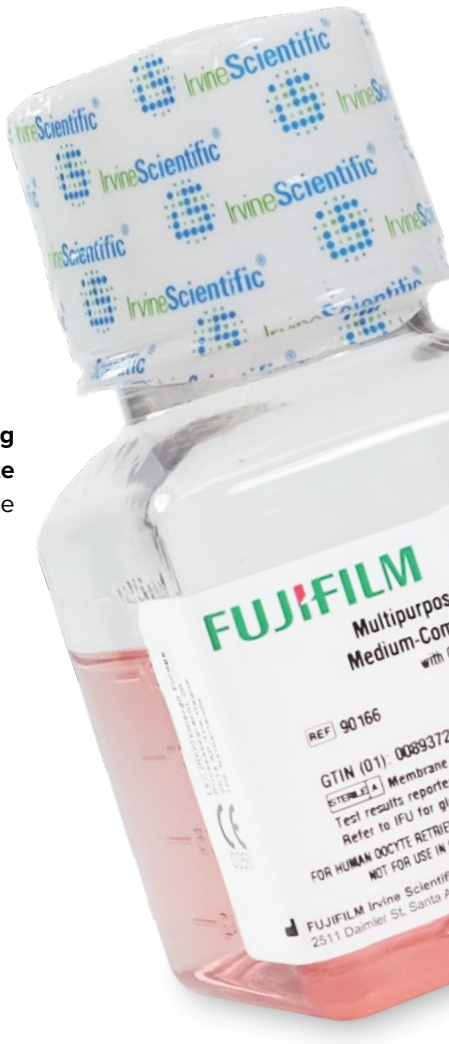
Results compiled from clinical use data collected from 2020—2023.

Handle Gametes and Embryos

In a stable environment

The perfect complement to Continuous Single Culture media. Multipurpose Handling Medium provides a versatile solution for all manipulations performed outside of the incubator such as oocyte retrieval and rinsing, sperm processing, ICSI, and embryo transfer.

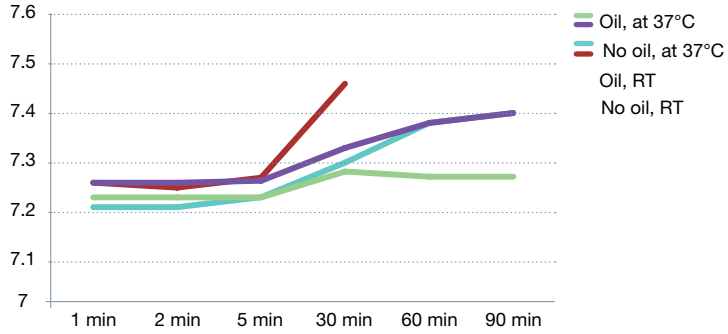
- Ensure an optimal, consistent environment outside the incubator
- Safely handle oocytes, sperm, and embryos
  - Maintains physiological pH 7.2–7.4 and osmolality over a broad temperature range
  - Minimizes cellular stress imposed upon gametes and embryos during IVF procedures
  - Reduces risk of toxicity using a dual buffer system (HEPES and MOPS)
- Use alternative protein supplements if preferred



Multipurpose Handling Medium–Complete
Ready-to-use

pH Maintained Across Broad Temperature Range

Multipurpose Handling Medium-Complete (MHM-C) 100 drops



pH maintained between the ideal range of 7.2–7.4 at room temperature and in an incubator under oil.

> Multipurpose Handling Medium provides the ideal environment for handling oocytes and embryos, whether it is retrieval, ICSI, or biopsying.
>
> *Martyn Blayney, Head of Science, Bourn Hall Clinic, U.K.*

Multipurpose Handling Medium
Add preferred supplements

Enhance Performance

With high quality protein supplements and oil

Every lot tested for biocompatibility using MEGA

Protein Supplements

Protein supplements facilitate *in vitro* manipulation by preventing gametes and embryos from sticking to glass and plastic. The presence of protein may also benefit embryo development by altering the solvent properties of the medium, making it more similar to the *in vivo* tubal environment.

Human Serum Albumin (HSA)

Human Serum Albumin (HSA) consists of 10% human serum albumin from therapeutic grade source material in normal saline. CE Marked.

SSS-NX (Serum Substitute Supplement – NX)

SSS-NX (Serum Substitute Supplement – NX) consists of 5% total protein (weight/volume) in normal saline. The protein component contains ≥83% HSA, ≤17% alpha and beta globulins, and ≤1% gamma globulins.

Heavy Oil for Embryo Culture

Heavy Oil for Embryo Culture is a ready-to-use, sterile, heavy mineral oil with ideal handling viscosity to prevent evaporation, changes in osmolality, and pH shifts, providing the optimal *in vitro* environment for embryo development. This high quality, non-interactive oil is stored in non-toxic plastic bottles, and no washing is required.

Oil for Embryo Culture

Oil for Embryo Culture minimizes evaporation, maintains osmolality, and reduces pH drift. Ready-to-use, this high quality, sterile, non-interactive light mineral oil is stored in non-toxic plastic bottles, and no washing is required.

Using genetic engineering to deliver high quality products

Every lot of raw materials used for manufacturing protein and oil is quality control tested using MEGA, a genetic mouse embryo assay that is more sensitive to embryo-toxic materials than the traditional mouse embryo assay (MEA).[7]

7 Gilbert RS, et al. (2016)

Ordering Information

Culture media

Item	Catalog #	Size	Additional Information	Shelf Life	Storage
Continuous Single Culture-NX Complete	90168	2 x 20 mL 60 mL	Ready-to-use, pre-supplemented with Human Serum Albumin (5% v/v HSA), for a final total protein concentration of 5 mg/mL. Phenol red free. CE marked.	4 weeks after opening 120 days*	2–8°C
Continuous Single Culture-NX	90167	60 mL	Requires protein supplement. Phenol red free. CE marked.	4 weeks after opening 120 days*	2–8°C
Continuous Single Culture Complete	90165	2 x 20 mL	Ready-to-use, pre-supplemented with Human Serum Albumin (5% v/v HSA), for a final total protein concentrationof 5 mg/mL. Contains phenol red. CE marked.	8 weeks after opening 120 days*	2–8°C
Continuous Single Culture	90164	60 mL	Requires protein supplement. Contains phenol red. CE marked.	8 weeks after opening 90 days*	2–8°C

Gamete and embryo handling

Item	Catalog #	Size	Additional Information	Shelf Life	Storage
Multipurpose Handling Medium-Complete (MHM-C)	90166	100 mL 500 mL 12 x 12 mL	Ready-to-use. Contains key amino acids, 0.5% HSA, gentamicin 10 mg/L. CE marked.	12 months*	2–8°C
Multipurpose Handling Medium (MHM)	90163	100 mL 500 mL	Contains gentamicin 10 mg/L. Add preferred supplements. CE marked.	12 months*	2–8°C

Protein supplements

Item	Catalog #	Size	Additional Information	Shelf Life	Storage
Human Serum Albumin (HSA)	9988	12 x 5 mL	Saline solution containing total protein 10% w/v, 100% HSA. CE marked.	3 years*	2–8°C
SSS-NX (Serum Substitute Supplement – NX)	90194	12 x 10 mL 100 mL	Saline solution containing 5% total protein w/v: ≥83% HSA, ≤17% alpha and beta globulins, and ≤1% gamma globulins in saline.	1 year*	2–8°C

Oil for embryo culture

Item	Catalog #	Size	Additional Information	Shelf Life	Storage
Heavy Oil for Embryo Culture	90189	100 mL 500 mL	Ready-to-use sterile heavy mineral oil overlay for small media volumes.	8 weeks after opening 2 years*	2–8°C
Oil for Embryo Culture	9305	100 mL 500 mL	Ready-to-use, sterile, light mineral oil. CE marked.	8 weeks after opening 2 years*	15–30°C

*From date of manufacture

References

1. Benini F, Watson L, Dusini S, A Degl'Innocenti, Adversi F, Cammunci S, Di Biase L, F Bertini, Benvenuti M. A low-lactate undisturbed culture medium protocol provides an increase in usable blastocysts on day 5 vs. day 6. *Human Reproduction*. 2022;37(1). deac107.254
2. Manzo R, Listorti I, Colasante A, Scarselli F, Greco P, Arrivi C, Watson L, Greco A, Varricchio M.T., Pirastu G, Musella M, Barberi M, Uva D, Pristera' A, Greco E. A continuous culture medium with a lower concentration of lactate has a pronounced effect on the percentage of usable blastocysts on day 5. *Human Reproduction*. 2022;37(1). deac107.256
3. Hammond E, Morbeck D. Reducing the stress of culture? Low lactate embryo culture medium increases usable blastocyst rate for women of advanced maternal age. *Fertility and Sterility*. 2020;114(3); e7-e7
4. Whitney JB, Watson L, Maizar A, VerMilyea M. Positive effects of low-lactate culture medium on embryo development and blastocyst ploidy status: a 3.5-year multi-clinic retrospective review. *Human Reproduction.* 2022; 37 (1).deac107.217
5. Kobanawa M. Fertilization, embryo culture, and clinical results using low lactate embryo culture medium for pre-culture, insemination, and beyond. *Reprod Med Biol*. 2022;21(1):e12458. doi:10.1002/rmb2.12458
6. Moreno Moya JM, Mansell S, Alland I, Øverlie I, Sørdal T, Finset M. CSCM-NXC media containing a low lactate concentration seems to benefit expansion grade compared to traditional continuous media. *Human Reproduction*. 2022; 37(1), deac104.080
7. Gilbert RS, Nunez B, Sakurai K, et al. Genetic mouse embryo assay: improving performance and quality testing for assisted reproductive technology (ART) with a functional bioassay. Reprod Biol Endocrinol. 2016; 14(13). https://doi.org/10.1186/s12958-016-0149-x

www.irvinesci.com