ARTSMedia Denmark

– Where new life begins

Where new life begins

ARTSMedia Denmark manufactures high quality media for Assisted Reproductive Technology ensured via a unique combination of expertise from the scientists Lotte Stroebech, CEO, Doctor of Veterinary Medicine, PhD and Claus Yding Andersen, MSc, Doctor of Medical Science. ARTSMedia In Vitro Culture Medium (AM-IVC Medium) is the first product of many to come registered with FDA.

AM-IVC Medium is a culture medium intended for in vitro fertilization and in vitro culture of human gametes and embryos from fertilization until the blastocyst stage of development (day 5). The medium can also be used for embryo transfer.




ARTSMedia Denmark

ARTSMedia Denmark history

ARTSMedia Denmark is founded by Dr Lotte Stroebech and Professor Claus Yding Andersen.

Our investor China Medical International Health Ltd, HK, China, is owned by a group of fertility clinics that represents more than 50.000 cycles/ year throughout China and the United States.

It is our company DNA to provide innovative media formulations based on strong scientific evidence and extensive quality control tests.

The Bovine Embryo Assay, BEA test, is an important test in addition to MEA test. Our media batches are regularly monitored through BEA tests which are also an important part of our Research and Development.

With an exceptional large access to data from investor clinics and the extensive feedback through the post-market surveys on the number of cycles, pregnancies, and live births we ensure optimization and follow up on our product quality and performance.



Lotte Stroebech

CEO, CSO, Owner,
Doctor of Veterinary Medicine, PhD

Founder of
- Stroebech IVF Universe
- Stroebech Media
- ETB, EmbryoTrans Biotech
- ARTSMedia Denmark

Lotte Stroebech was the first in the world to formulate and market a commercial serum-free ready-to-use media range for animal IVF, sold to IVFBioscience, UK. In 4 years positioned as global #1 best performing IVF media and protocol.

She established and was head of the bovine IVF Research Laboratory at Origio, Cooper Surgical Denmark.

Board positions
Former chairman of the board of Danish Society of Reproduction and Fetal Development, DSRF. Dr. Stroebech has also been board member at International Embryo Technology Society, IETS and Association of Embryo Transfer Society Europe, AETE.

Claus Yding Andersen

CSO Consultant,
Owner and Doctor of Medical Science

Claus Yding Andersen was Scientific Director of the Laboratory of Reproductive Biology, University Hospital of Copenhagen, Denmark and Professor of Human Reproductive Physiology with the Faculty of Health and Medical Sciences at the University of Copenhagen.

Professor Yding Andersen was a member of the team that introduced IVF to Denmark in the mid-1980s and have worked as a consultant in more than 10 fertility clinics nationally and internationally. During the early years of IVF in Denmark, he produced and sold media for IVF treatment to all Danish IVF clinics and has been involved in media improvements throughout the years.

During the last twenty years he has headed a national program of cryopreservation of human ovarian and testicular tissue. He is considered one of the pioneers in this field and continues to expand the indications for the use of ovarian tissue cryopreservation in different clinical settings.

ARTSMedia Denmark

Birthe Avery

Scientific Advisor Consultant,
MD, PhD, DVSc.

Dr Avery is an international recognized pioneer within IVF and former associate professor (from the Veterinary Faculty, University of Copenhagen). Dr. Avery was for 27 years head of the IVF laboratory, and responsible for the research, which mainly included bovine, porcine and equine in vitro embryo technology. Dr Avery is a noteworthy embryologist, researcher and educator.

She became Doctor of Medicine, University Copenhagen, 1977 and PhD in Embryology, Royal Veterinary and Agricultural University, Copenhagen, 1991. And in 2007 Doctor in Veterinary Sciences, Royal Veterinary and Agricultural University, Copenhagen.

She has been a guest professor at Cornell University, New York, 1984, University Estate São Paulo, Jaboticabal, Brazil, 1993, University Wisconsin, Madison, 1996. Furthermore, she has been invited speaker to numerous national and international scientific conferences.

Martin Thomsen

CFO/COO

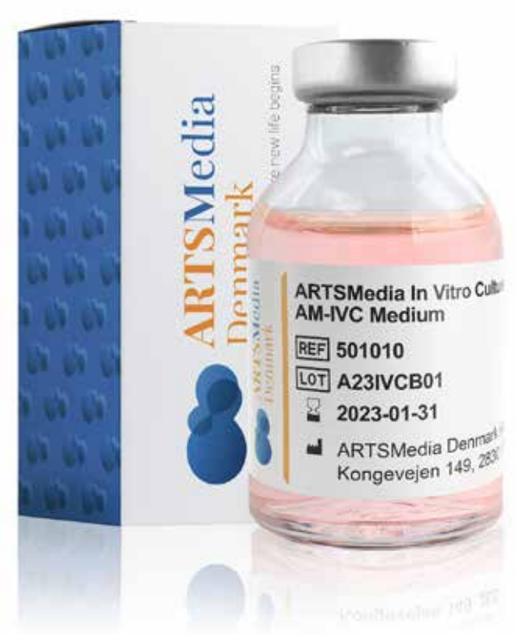
Martin Thomsen has 15 years of experience as CFO and COO for international companies, doing business in China, USA, UK, Germany, Ukraine and Scandinavia. Furthermore, Martin Thomsen has been head of establishing 3 start-ups to successful companies.
He has due diligence on the seller and buyer side as well as successful sale of a company to a private equity fund.

Martin Thomsen was in the lead of the establishment of a factory in Hundested, Denmark for Chinese investors, for production of infant formula for sale in China. Responsible for factory and production.

Martin Thomsen has extensive experience in contact and negotiations with banks, suppliers, auditors and public authorities.

ARTSMedia in Vitro Culture Medium

AM-IVC Medium with Human Serum Albumin



AM-IVC Medium is a culture medium intended for in vitro culture of human gametes and embryos from fertilization until the blastocyst stage of development (day 5). The medium can also be used for embryo transfer.

Device Description
ARTSMedia Culture Medium is a bicarbonate-buffered balanced salt solution, with physiological salts, Amino acids, Calcium lactate, EDTA, Gentamicin sulphate 10 µg/ ml, Glucose, L-glutamine, Human serum albumin (HSA), Insulin, Sodium hyaluronate, Sodium pyruvate, Sodium bicarbonate, and Phenol red.

Quality Control Specifications
pH: 7.2 – 7.45 (Ph Eur. 2.2.3, USP <791>)
Osmolality: 257-275 mOsm/kg

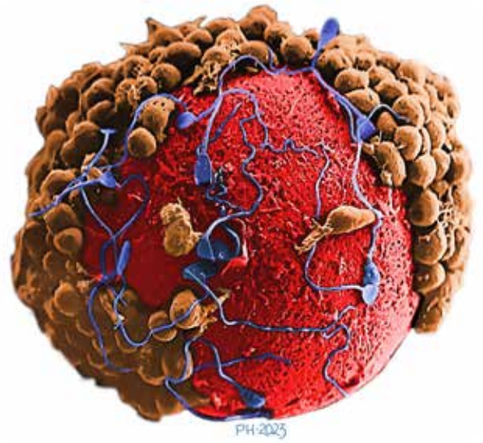
(Ph Eur. 2.2.35, USP <785>)

Appearance: Clear and particulate free
Sterility: No growth (Ph Eur. 2.6.1, USP<71>)
Endotoxins: < 0.05 EU/ml (USP <85>)
1-cell Mouse Embryo Assay (MEA) ≥ 80% embryos developed to expanded blastocysts at 96 hours.

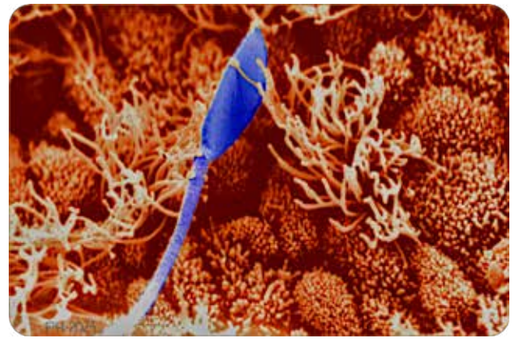
The results of each batch are stated on Certificate of Analysis, which is available upon request.

Storage
Store dark at 2-8° C in original container.
Do not freeze.

General notes before use
AM-IVC Medium is bicarbonate buffered and should pre-equilibrate in a CO_2. incubator set at 37° C and 5-6% CO_2
Note: Adjust incubator settings to a higher CO_2 concentration if the altitude is above sea level.



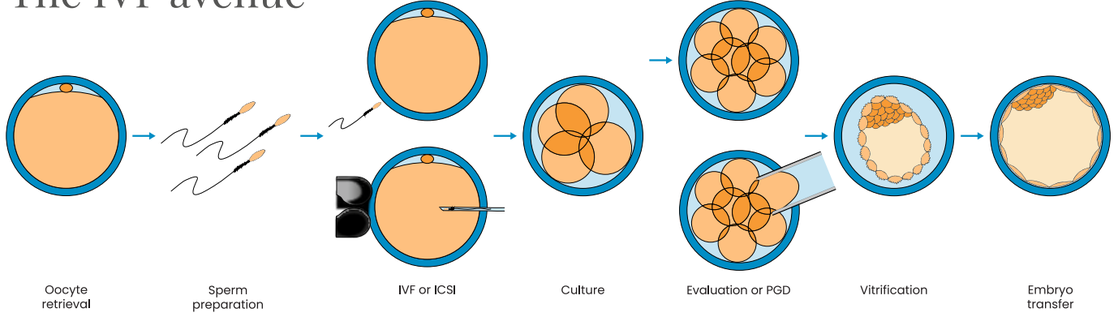
Scanning electron micrograph of bovine oocyte one hour after insemination in vitro. The photograph is pseudocolorized: Spermatozoa (blue), zona pellucida (red) and cumulus cells (orange).



Scanning electron micrograph of bovine spermatozoon in the oviduct. The photograph is pseudocolorized: Spermatozoon (blue) and oviduct epithelium (orange).

Photos: Professor Poul Hyttel

The IVF avenue



Poul Hyttel
Professor, DVM, PhD, DVSC, DHC, R1

Poul Hyttel

Professor Poul Hyttel holds a DVM, a PhD, and a Doctor of Veterinary Science degree from the former Royal Veterinary and Agricultural University (now incorporated into University of Copenhagen) where he has served as Professor of Anatomy for more than 40 years. Poul has conducted research in assisted reproductive technologies and stem cells, and he is internationally renowned for his electron microscopical visualizations of oocytes and embryos. Poul has now retired and shifted his focus into a more artistic avenue and serves ARTSMedia Denmark by providing graphically reworked micrographs and drawings.

MEA test vs BEA test

There is a difference between a woman, a mouse and a cow!

The Bovine Embryo Assay, BEA test, is an important test in addition to MEA test. Our media batches are regularly monitored through BEA tests which are also an important part of our Research and Development.

There are huge differences in reproductive physiology between the mouse and a woman, obviously also between a cow and a woman. The most obvious similarity in cow and woman is gestation time and that they don't give birth to litters like mice.

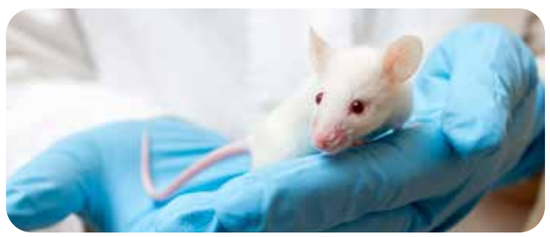
However, the MEA test is considered sufficient for quality control release of ART media. When media are tested in the BEA, that all have passed MEA, they often give significantly different blastocyst rates as well as considerable morphologic and kinetic differences in the BEA test.

In vitro oocyte maturation (IVM) , is at the moment not a standard procedure in human ART as it is and has been for decades in bovine ART. Therefore the BEA test includes quality control of all steps of the procedure, IVM, IVF and IVC.

In addition, fertilization and capacitation are species specific and a MEA test mostly assesses blastocyst development from either one-cell or two-cell stage embryos. Should a batch variation occur it will not be detected in a MEA test, where release parameter is > 80 % blastocyst rate. In the BEA test, however, a difference in medium quality can be detected even though the medium has passed the MEA test. For instance, 35 % vs 55 % blastocyst rates indicate two media are different, however both media will have passed the MEA. Hence, the MEA is a mere toxicological bio-assay, whereas the BEA also provides functional and performance data.

Therefore, we have decided that several batches will undergo the BEA test in addition to the required MEA Test.

How is the BEA test conducted?
Ovaries from slaughterhouse cows are collected and in the laboratory the oocytes are aspirated from all follicles larger than 3 mm. Approximately 8 oocytes per ovary is on average obtained. They are subsequently matured, fertilized and cultured. Each new medium is tested in a control group with a minimum 150 oocytes per group. Blastocyst rates and kinetics and morphology are evaluated as well as hatching rates. The average blastocyst rates in the BEA test are between 40-50% and thus indicate performance differences, whereas 80-90% blastocyst rates in the MEA test only indicate whether the medium is toxic or not.



More similarities and differences between mice, cows and women.

	Human	Cow	Mouse
Oocyte diameter (µm)	110-120	120	70-90
Stage at zygoticgenome activation	4-8 cell	8-16 cell	2 cell
Time to reach			
2-cell stage (hours)	30	36	18-20
Blastocyst (hours)	120	150	70
Hatching (hours)	150	200	100
Implantation (days)	9	21	4

Amino acid
Amino acid uptake and utilization also differ among species with mouse embryos not requiring amino acids to develop to the blastocyst stage, in contrast to bovine and human embryos.

pH
Mouse embryos are less sensitive to and recover more easily from changes in pH than human and bovine embryos.

Glucose
The ability to utilize glucose varies among species. Human embryos do not utilize glucose due to limited availability of hexokinase. The situation is more complicated for the mouse, as embryos from some strains can metabolize glucose while others cannot. Cattle embryos are able to metabolize glucose, although this is affected by culture conditions.

The strains of mice and developmental stage
Some of the controversy regarding the perceived value of the mouse embryo assay is likely the result of the conditions under which the assay was conducted. The strain of mouse used, stage of embryo used and the culture conditions employed may also affect the outcome. Thus, embryos from inbred strains may provide a better model, and the developmental stage of the embryo will also impact the result. For instance, one-cell embryos are more sensitive than two-cell, four-cell or eight-cell embryos.

Finally, the type of media also influences the assay. For instance the absence of protein in the media improves the sensitivity of the assay.

Based on: *"Virtues and limitations of the preimplantation mouse embryo as a model system,"* by Robert A Taft, 2007 in Theriogenology. Read the full article here: https://doi.org/10.1016

Plastic vs Glass bottles

Only in glass bottles can you maintain stability of the active compounds in the media for up to 18-24 months. Plastic will decrease quality of media over time and even contribute to toxicity and will always have a limited shelf-life. The entire batch must be manufactured in one day. That means that no stock solutions should be stored for a longer period of time and that the entire batch should be manufactured and bottled within the same day and not stored overnight.

Our mission

To offer customers and partners products with competitive advantages by supplying the highest performing science based products and services. To be the preferred IVF media provider chosen by IVF laboratories for optimal ART solutions.

Our vision

To be the leading global company within in vitro fertilization high quality media for human assisted reproductive technology, ART, supporting the increased global demand and to help fertility patients becoming parents through close collaboration with our IVF Clinic customers.

Our core values

- Innovation & Operational Excellence
- Best place to work
- Diversity
- Integrity
- Protect the Environment

Get in touch

ARTSMedia Denmark
Kongevejen 149
DK-2830 Virum
Denmark
Tel: +45 53504530
info@artsmedia.dk

More information
Send a mail to
info@artsmedia.dk
and get the latest news, events information and newsletters.

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