

Nidacon News

The news letter from your ART supplier • No 2 • 2024

Revolutionizing Reproductive Health with Varinos and Nidacon

Nidacon is honored to represent Varinos' Endometrial Microbiome Test throughout Europe.

Varinos, a cutting-edge biotech start-up founded by Yoshiyuki Sakuraba in 2017 in Tokyo, Japan, leads the way in genomic testing services for reproductive health. Their innovative research emphasizes the crucial role *Lactobacillus* plays in determining pregnancy outcomes.

At the recent ESHRE meeting in Amsterdam, Varinos and Nidacon presented together, receiving an overwhelmingly positive response from attendees. Dr. Koichi Kuono captivated the audience with his lecture on "Advances

in Infertility Diagnosis and Treatment through Microbiome Analysis," enlightening many participants.

This successful collaboration between Nidacon and Varinos leverages Varinos' expertise and advanced testing system.

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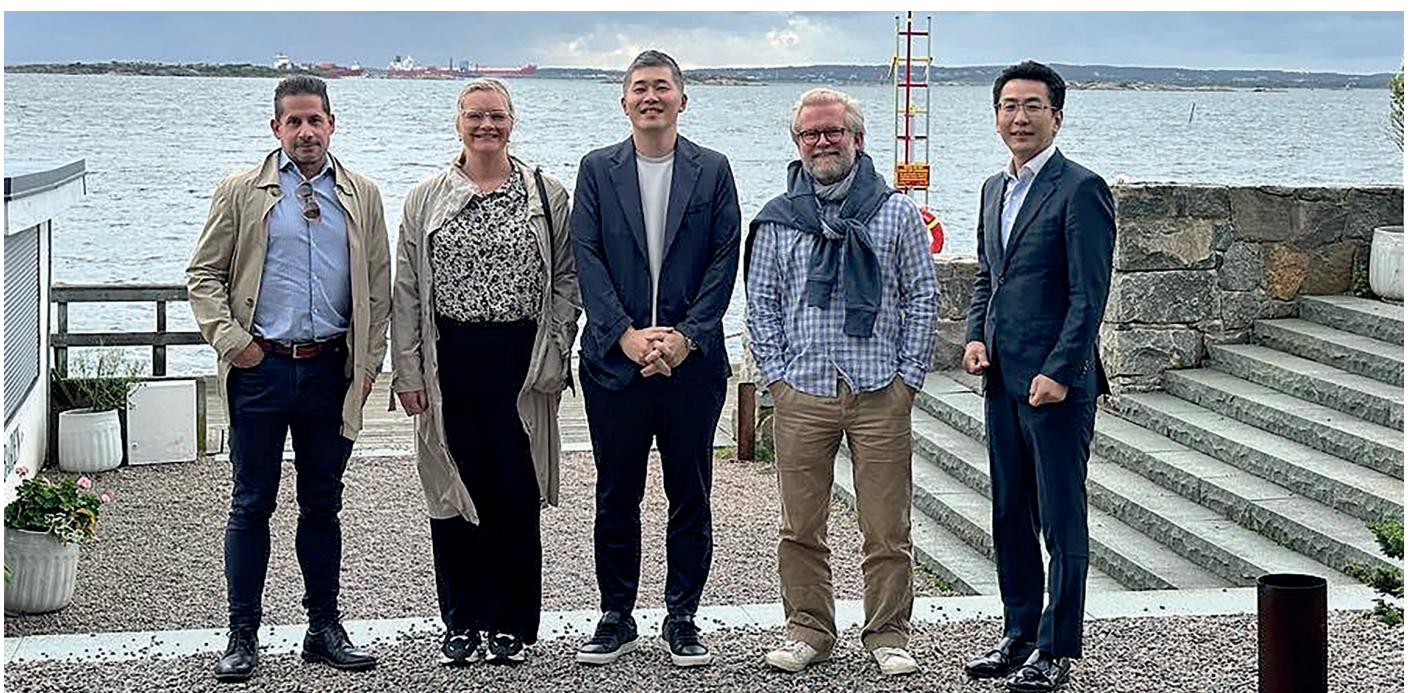
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with Nidacon's extensive network of local representatives across Europe. Clinicians can easily connect with their local representative to register on the Varinos website. Shortly after registration, a comprehensive test-kit, complete with return shipping materials, is dispatched. Within just 2-3 weeks, clinicians will receive detailed test results.



Varinos



First meeting with Varinos in Gothenburg, Sweden.

The differences in implantation rates by species-level analysis of the endometrial microbiome and probiotic use

The human uterine cavity was thought to be sterile for a long time. However, it is becoming increasingly clear that bacterial flora is present there.

Similar to the microbiota that forms the gut and oral cavity and plays a role in the expression of function and immunomodulation of their habitats the abundance of *Lactobacillus* in the uterine microbiota is considered a sign of a healthy uterus.

Abundant intrauterine *Lactobacillus* is associated with good in vitro fertilization (IVF) outcomes; however, whether specific species of *Lactobacillus* have any benefit remains unclear.

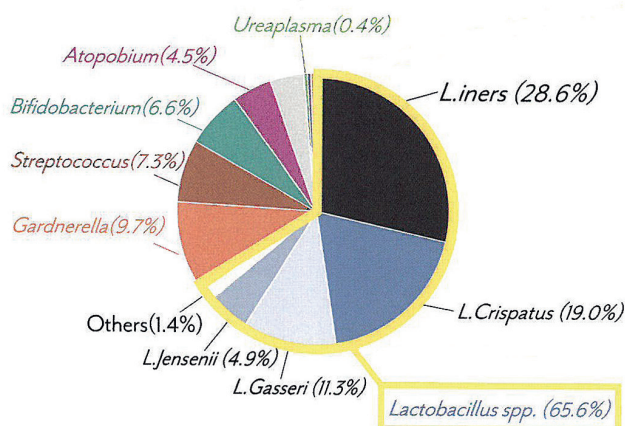
The development of next-generation sequencing (NGS) technologies has made it possible to quantify bacteria using the variable region of the 16S rRNA gene, enabling a more comprehensive assessment of the microbiota.

This study examines the effect of *Lactobacillus* on the clinical outcomes of IVF at the species level. Uterine microbiota were classified as either *Lactobacillus*-dominant (LD) or non-*Lactobacillus*-dominant (NLD).

There are approximately 20 species of *Lactobacillus* in the vagina uterus but four main species are detected; *L.crispatus*, *L.gasseri*, *L.iners* and *L.jensenii*. It has been reported that a predominance of *L.iners* makes patients more susceptible to bacterial vaginosis, sexually transmitted diseases and premature birth.

From these previous reports, the hypothesis was that specific species of *Lactobacillus* might have different effects on implantation.

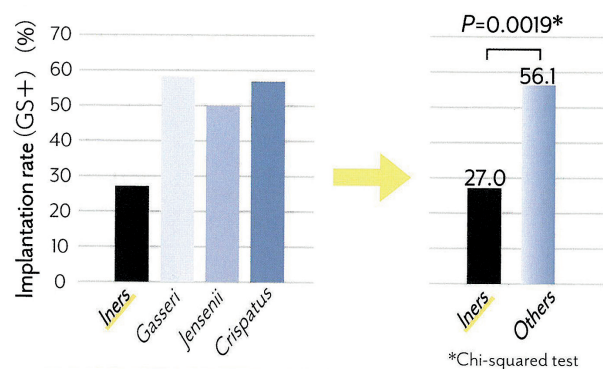
Species-Level analysis of *Lactobacillus* in repeated implantation failure (RIF) patients



A retrospective study was conducted with 151 women who had experienced IVF repeated implantation failure (RIF). Of these, 73 participants whose uterine microbiome analysis showed they were LD underwent frozen-thawed single blastocyte transfer. A comparison was made of the clinical outcomes of single frozen-thawed embryo transfer conducted by *Lactobacillus* species and found that the implantation rate was lowest in those in whom *L.iners* was dominant.

This study is the first to conduct a species-level analysis of the uterine microbiota and report on a detailed investigation of *Lactobacillus*, which was believed to be particularly helpful for pregnancy.

Relationship between *Lactobacillus* Species and Implantation rate



Improving the composition of the endometrial microbiota may be beneficial for all women who want to conceive. In this study, the endometrial microbiota was evaluated for patients with RIF and possible treatments were investigated.

A total of 392 patients with RIF were enrolled in this prospective cohort study and underwent endometrial microbiota analysis. Patients diagnosed with NLD were treated with a combination of oral and vaginal probiotics or oral prebiotics and antibiotics. The outcome was evaluated through re-analysis of the endometrial microbiota following treatment, and the results are presented as cure rates. NLD represented 44.9 % of the total endometrial microbiota in patients with RIF. The most commonly detected bacterium was *Gardnerella vaginalis*.

Significant improvements were noted in the vaginal probiotic suppository + antibiotics group. Moreover, approximately half of patients with RIF had NLD.

Thus, the combination of a vaginal probiotic suppository and antibiotics may represent an effective treatment for NLD cases.

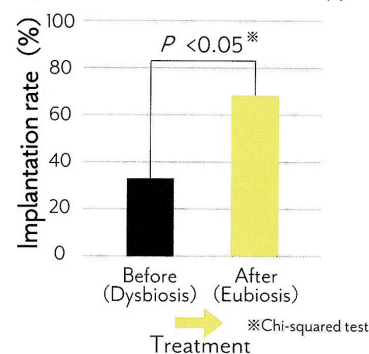
References

Impact of *Lactobacillus* in the uterine microbiota on in vitro fertilization outcomes
Kadogami et al Journal of Reproductive immunology 2023

Use of vaginal probiotic suppository and antibiotics to influence the composition of the endometrial microbiota
Kadogami et al Reproductive Biology 2020

Dysbiosis

Dysbiosis: < 80% *Lactobacillus* spp.



Product Update: ProInsert Availability and Ongoing Solution Efforts

As many of you are likely aware of, the ProInsert product is currently unavailable.

This is due to an unexpected change in the tubes that house the insert. Our supplier made a sudden modification to the pipe threads, rendering the corks we use incompatible.

We are actively working to resolve this issue, but unfortunately, it is taking longer than expected.

We will keep you updated on our progress and aim to have ProInsert back on the shelves by next year.

ProInsert plays a key role in making gradient performance both safer and faster by eliminating the risk of re-contamination when retrieving the pellet from the bottom of the tube. It comes pre-installed in the centrifuge tube, allowing for easy retrieval of the pellet through a channel that runs directly to it, avoiding contact with the contaminated gradient.

We will keep you updated on our progress and aim to have ProInsert back on the shelves by next year.



Microplastic pollution

Plastic waste has led to microplastic pollution, affecting environment from Mount Everest to deep oceans.

People ingest these particles through food, water and air, potentially causing inflammation or harm through the chemicals in plastics. Warnings have been issued regarding increased risk of stroke, heart attack, and early death linked to micro-plastic-contaminate blood vessels.

Men's sperm counts have been decreasing for decades, with chemical pollution like pesticides being a known factor. Microplastics have also been found in human blood, placenta, and breast milk, indicating a wide spread contamination.

Microplastics have been detected in human testicle, raising concerns about their potential link to declining sperm counts. University in New Mexico published results in 2024 where they have examined both human and canine testes and found microplastics in all samples. The human tested were preserved

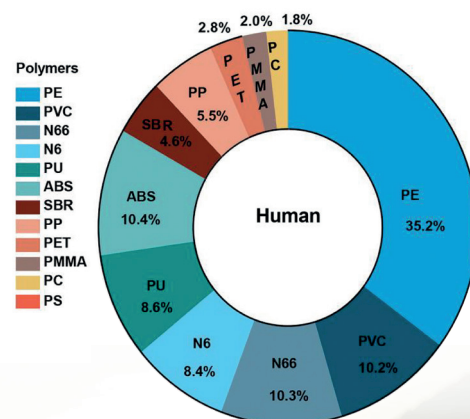
and could not be measured for sperm counts, canine testes showed a correlation between higher PVC contamination and lower sperm counts. The average abundance of total microplastics was 3 times higher in human compared to canine testes. Both human and canine exhibit relatively similar proportions of the major polymer types, predominated with PE, followed by PVC.

Limited data exists on microplastics within the human reproductive system and their potential consequences on sperm quality. Further studies are definitely needed.

Microplastic presence in dog and human testis and its potential association with sperm count and weights of testis and epididymis.

Chelin Jamie Hu et al University of New Mexico Toxicological Science 2024 200(2)

Relative composition of different microplastic types in human testicular tissue.



Why is October the pink month?

By now you are all aware that October is Breast Cancer Awareness Month, sometimes known as the "pink month."



We support the Swedish Cancer Society 2024



It is a yearly initiative that is quite significant and contributes to raising awareness of breast cancer. So, let's learn more about the subject and the background and significance of this month.

An international campaign to raise awareness on breast cancer was started by breast cancer charities in October. The campaign's objectives are to generate money for research into the causes, prevention, diagnosis, treatment, and cure of breast cancer and to raise awareness about breast cancer. The American Cancer Society and the pharmaceutical division of Imperial Chemical Industries collaborated to launch the pink month in 1985 with the intention of promoting mammography as a means of identifying and preventing breast cancer.

Among both the "developed" and "under developed countries," breast cancer is the most prevalent form of cancer in women, according to the World Health Organization. Worldwide, breast cancer claimed the lives of about 508 000 people in 2011.

As a proud corporate friend of the Swedish Cancer Society, Nidacon is committed to the fight against cancer.

Our involvement in the Swedish Cancer Society is part of our CSR work. We strive to contribute to a better future by supporting research, spreading knowledge and raising awareness about cancer. Through our joint efforts, we can create a positive impact on society and help save lives.

We are convinced that every contribution counts, together we make a difference.



Well-dressed climbers on Kilimanjaro, Tullis with crew.



Fredwell Hambiliki, lab manager Lunds IVF Sweden.



Happy staff at LIVIO Umeå Sweden.

Coming up



Svensk Andrologisk Förening
För sjukvårdspersonal

■ Andrology för ST doctors

Swedish andrology Society Stockholm, 20-21th November

Reproduction - Facts,
Myths and Evidence

8 - 11 January
ACC Liverpool

■ Reproduction – Facts, Myths and Evidence

8-11 January, Liverpool, UK

► Who to contact



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