

Nidacon News

The news letter from your ART supplier • No 1 • 2016

► New family member

We have the great pleasure to announce that we are extending our line of density gradient products with a new gradient concentration. Introducing PureSperm® 90! The launch of this new family member will take place at the ESHRE meeting in Helsinki, 2016.

Greater flexibility

You will now have a wider selection of density gradients to choose from depending on what you want to use the final sperm preparation for.

The difference in the results, for example, between a 40/80 and a 40/90 gradient is that the higher concentration will give a higher percentage motile sperm but a slightly lower yield. The overall difference is not very large but will give a more specific separation depending on the treatment chosen for the patient.

Improved composition

We have also made some minor changes in the composition of salts to all three concentrations of our gradients in order

to optimize the sperm preparations even further. The overall result of this change is a higher progressive motility in the final sperm preparation.

The clinical tests have shown good results with no significant differences in

So in conclusion, you will get a wider selection of even higher quality products for your lab.

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fertilization or pregnancy rate but the overall feedback is that the new composition is better and it will be the gradient of choice for the test clinics from now on.

Same quality

The new PureSperm® 90 is guaranteed to give the same high quality sperm preparation as the PureSperm® 40 and PureSperm® 80. The only difference will be, as can be expected, that a gradient with a PureSperm® 90 as the bottom layer will give a higher percentage motile sperm but a slightly lower yield. So in conclusion, you will get a wider selection of even higher quality products for your lab.

Available in July

The new products will be available at ESHRE, more exactly on the 1st of July. PureSperm® 90 will so far only be available in 100 ml bottles and the price will be the same as for PureSperm® 80.

Please let us know if you have any questions regarding these new products.



Product Specialist
Ms. Ann-Sofie Forsberg
Direct +46 31 703 06 42
ann-sofie@nidacon.com



► Why male marathoners might be the best men around

Long distance runners are hot-scientifically speaking. It's not just that running makes men fit and athletic: long-distance running might be the mark, natural-selection-wise, of a high quality male, according to a new research, one that women would do well to select as a mate.



You know what they say – better runner, longer ring finger.



The study, conducted by the University of Cambridge's Division of Biological Anthropology, analysed a group of 542 long distance runners (439 men and 103 women). They found that the best performing runners were likely exposed to higher levels of prenatal testosterone in their mother's blood.

The scientists assessed this using the "2D:4D ratio" – the length of the ring finger versus the index finger, since people who have been exposed to higher levels of testosterone have a longer fourth finger in comparison to the second.

Prenatal testosterone exposure, which "androgenizes" the foetus, is also associated with traits such a stronger sex drive, higher sperm count and better cardiovascular efficiency in men. Bluntly speaking, better long-distance running skills might signal a higher quality male – at least in terms of reproductive fitness.

► Zika virus and its effect on assisted reproduction techniques

The authorities in United States are warning of the risk for the ZIKA virus and the possible pathological effects of the virus during embryonic and fetal development. This decision has been made as a result of children from endemic viral areas being born with microcephaly.

Implications for IVF

For infertility patients it is a very difficult decision to postpone treatment for an undetermined period, since their chance of getting pregnant decreases with time.

Test for Zika virus is recommended before any treatment.

Nidacon suggests the following to minimize risks:

1. Blastocyst Vitrification

By Vitrification of Blastocyst and subsequent frozen storage, you can postpone transfer of the healthy embryo to when the epidemic has decreased or is under control. Many clinics have excellent results with VitriBlast vitrification and high survival rates after ThermoBlast warming.

2. Cleaning of the Semen sample

A PureSperm® density gradient will effectively remove lymphocytes, epithelial cells, abnormal, immature and senescent sperm, cell debris, seminal fluid, bacteria and, to some considerable extent, also viruses.



It is important to avoid any re-contamination of the separated sperm and we therefore recommend using the ProInsert™ (1, 2).

Test for Zika virus is recommended before any treatment.

3. Patient Communication

Inform the patient that semen handling procedures are merely risk reduction methods, while the risk itself cannot be totally eliminated. An informed consent must be signed by the couple wherein the potential consequences of the technique inadequacy are acknowledged.

Ref:

1. Elimination of bacteria from human semen during sperm preparation using density gradient centrifugation with a novel tube insert *J. Fourie, N. Loskutoff & C. Huyser, Johannesburg, South Africa, Andrologia, 2011, pp 513-517.*

2. Use of a novel washing method combining multiple density gradients and trypsin for removing human immunodeficiency virus-1 and hepatitis C virus from semen. *Naida M. Loskutoff, Ph.D., Carin Huyser, Johannesburg, South Africa, Fertility and Sterility, Vol. 84, No. 4, October 2005, pp 1001-1010.*

Loskutoff, Ph.D., Carin Huyser, Johannesburg, South Africa, Fertility and Sterility, Vol. 84, No. 4, October 2005, pp 1001-1010.



KAM, Latin America
Mr. Mauricio Lucena
Direct +46 31 703 06 39
mauricio@nidacon.com

The symposium, "Prevention of Communicable Diseases in Assisted Reproduction"

The Association of Colombian Centers in Human Reproduction will arrange the symposium in Bogota, Colombia on the 6th of May 2016.

Carin Huyser from The University of Pretoria, South Africa will give a lecture on Prevention of infections in the ART program, from protocol to practice.

Together with Nidacon, Cecolfes will arrange a workshop on the preparation of sperm and the freezing of sperm.

Freezing of sperm before, compared with after, gradient preparation

Introduction

To obtain the best survival results when freezing and thawing sperm, you need a suitable cryo-protective medium. Certainly, the medium is not all that is needed. A suitable protocol for freezing and thawing affects the results significantly.

The objective of this study was to determine whether there are differences regarding the numbers of sperm and their motility when (1) freezing gradient-prepared sperm or (2) freezing whole ejaculates followed by gradient-preparation after thawing.

Method

Protocol 1:

Motility and number of sperm were determined in the unprepared ejaculates (n=12). Thereafter, the ejaculates were split equally in two halves.

The first half was prepared on a PureSperm® gradient (2ml 40% and 2ml 80%), centrifuged at 300 x g for 20 minutes and, thereafter, transferred to 5ml PureSperm® Wash (PSW), and centrifuged for 10 min at 500 x g. The upper 4ml of PSW was discarded. After preparation, the sperm suspensions were frozen and thawed using SpermCryoProtect™ (SCP) and the protocol recommended for this product (for the protocol, see Nidacon.com). After thawing, the

straw contents were extended in 5ml PSW and centrifuged for 10 min at 500 x g.

Protocol 2:

The second half of the ejaculates was directly frozen using SCP (Nidacon.com for protocol).

When thawing, all samples were extended in 1ml PSW. (Extending in this way is important, since the sperm need to restore density prior to the gradient preparation). Thereafter, the thawed, extended ejaculates were prepared as in protocol 1.

Sperm motility and number of motile sperm were assessed for the two different treatments.

Results

Motility was 73% when gradient preparing sperm prior to freezing and 61% when using gradient after thawing. (Figure 1).

Number of motile sperm was more than double when using protocol 1, i.e. gradient preparing sperm samples prior to freezing (Figure 2).



Sperm motility and number of motile sperm were assessed for the two different treatments.

Frequently asked questions

How long can I use the product after opening?

The same shelf-life applies even after opening. If you, for example, have a bottle of PureSperm®100 with a shelf-life that says 17Jan 2017, you open the bottle and, thereafter, keep it in the fridge and use it until the 17th of January 2017.

Of course, you must use aseptic procedures when handling the bottle.

How can the products be so stable? All ingredients are chosen for their temperature tolerance and their stability in aqueous solutions.

Rigorous shelf life testing before and after opening has been carried out to ensure that the theoretical stability of the salt formulation is matched by the actual stability when combined in the product.

Conclusion

Preparing sperm prior to freezing is preferable to freezing sperm before preparation. The recovery was more than doubled when following Protocol 1 in this experiment. Also, the percentage motile sperm was better when using Protocol 1.

If still using Protocol 2, it is important to extend the thawed sperm sample in PureSperm® Wash prior to gradient preparation, in order to restore the sperm density, when using density gradients.

Figure 1: Sperm motility after freezing with different preparation protocols (n=12)

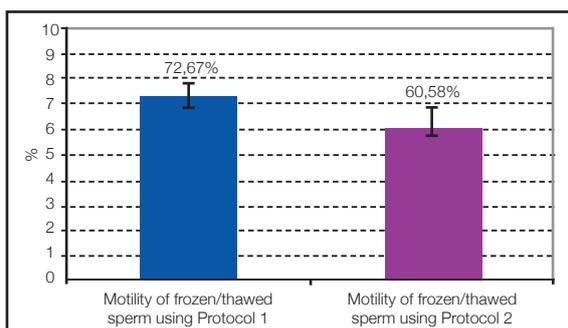
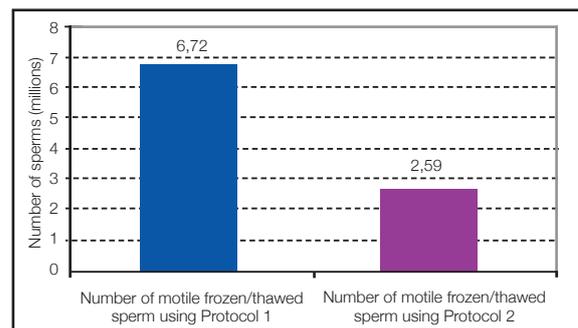


Figure 2: Number of motile sperm after freezing with different preparation protocols (n=12)



► Every small step matters

In ecology, sustainability is the capacity to endure; it is how biological systems remain diverse and productive indefinitely.

In more general terms, sustainability is the endurance of systems and processes. The principle for sustainability is sustainable development, which includes the four interconnected domains: ecology, economics, politics and culture.

Nidacon believes in the importance of our legacy and works actively to make a positive imprint and to take responsibility for our impact on our world. A more conscious use of resources is essential in order to maintain healthy ecosystems and environments. Having a well-functioning system for waste recycling was therefore a natural step for us at Nidacon.

We investigated our express transports and came to the conclusion that we

should compensate for carbon emissions. Therefore from now on, we will pay an extra fee for every package that is shipped from us. UPS has a program called "UPS Carbon Neutral" which we will join and, for all other transports, we will compensate by planting trees through WWF.

Since we are all helping couples to fulfill their dreams of having a family, we feel that we have an extra responsibility for the children in the world. We will start by supporting an organization called "We care". Today they have three ongoing projects for "street children" in Nepal. We put a lot of effort into choosing which organizations/projects we support but are open to your suggestions.

Please, contact us with your thoughts!



► New distributors

We would like to welcome Dr. Holger Kayser and colleagues at Esco Micro Pte. Ltd as our new distributor in Germany, Austria and Switzerland.

Esco represents innovation and forward-thinking designs, which are all coupled with the highest standard quality since 1978. The Esco Group of Companies remains dedicated in delivering innovative solutions for the clinical, life sciences, research, industrial, laboratory, pharmaceutical and IVF community.



We would also like to welcome Catherine Broberg and colleagues at E.in Art as our new distributor for Ghana, Nigeria, Uganda, Senegal, Burkina Faso, Ivory Coast, Cameroun, Benin, Mali, Niger, Togo, Congo, Gabon and Rwanda.

E. in Art stands for excellence in assisted reproduction and offers a full service and organizational package. The mission of E in ART is to provide a customized approach to improve the success rate of infertility clinics and ART centers.

Contact information can be found on our website.

► Who to contact



Product Specialist
Ms. Ann-Sofie Forsberg
ann-sofie@nidacon.com
Tel: +46-31-703 06 42



Logistics
Mr. Dennis Johansson
dennis@nidacon.com
Tel: +46-31-703 06 37

► Upcoming events



■ Meet us at ESHRE 2016! The 32nd Annual Meeting of the European Society of Human Reproduction & Embryology will this year be held at Messukeskus Expo and Convention Centre, 3-6th of July, Helsinki Finland.

Of course Nidacon will be present at the exhibition as every year. Do not forget to stop by our booth at location C162 for news and product updates!



■ ALPHA 2016 11th Biennial meeting 5-8th of May, Copenhagen, Denmark.



■ The Nordic IVF Laboratory Society 17th annual meeting 26-27th of August, Gothenburg, Sweden.

