

KEROS

AGREEMENT OPU - ICSI SEASON 2020 – 2021

Between :

Keros NV

Represented by Hilde Vandaele, Westrozebekestraat 23a, 8980 Passendale

Hereafter designated as : **Keros**

and

Mr/Ms :			
Should be invoiced to private person / Invoiced to Enterprise with VAT number (cross out what is not applicable – modifications cannot be made after invoice is issued)			
Enterprise :			
VAT No:			
Address :			
E-mail :			
Tel. :	Fax :	Portable :	

Hereafter designated as : **the client**

In advance

Current agreement applies to all techniques of OPU/ICSI, all embryos collected from donor mares owned or operated by the breeder during the season 2020 - 2021.

With the help of this document you will also get more information about the reproduction technique "OPU and ICSI" that is carried out at Keros nv in which the following aspects are discussed:

- Process from follicle to embryo
- Motivation choice OPU/ICSI
- Expectations
- Donor mares requirements
- Additional information
- Rates and terms of payment

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Process from follicle to embryo

A. OPU (Ovum Pick Up)

OPU is a technique in which follicles, which contain the oocytes, are punctured and emptied in order to collect oocytes.

The OPU session goes as follows:

1. Tail base is shaved
2. An epidural injection is performed and the mare is epidurally anesthetized
3. An ultrasound probe with biopsy channel is inserted into the vulva
4. The ovary is held through the intestine and taken to the ultrasound probe
5. Each follicle ≥ 1 cm is individually punctured, drained and rinsed several times to collect an oocyte
6. The fluid obtained from the follicles is examined in the laboratory for the presence of oocytes
7. The collected oocytes are carefully packed and sent to Avantea (Italy)
8. All oocytes are stored in a special medium for 24 hours to stimulate further ripening. Keros is under no circumstances liable if something goes wrong with the transport (e.g. delay, damage, loss of shipment, ...)
9. Only mature oocytes are fertilized (see chapter B. ICSI)

The OPU session takes approximately 1.5 hours (depending on the number of follicles) and can be performed at almost any time during the cycle.

The donor mare can go home the next day.

The choice of stallion must be communicated before the OPU session.

B. ICSI (Intracytoplasmic sperm injection)

ICSI is a technique where one matured oocyte is injected with one sperm cell by means of special equipment. This technique is done at Avantea in Italy.

C. Development of the embryo

After the ICSI is performed, the embryo continues to develop in a special fluid in the laboratory. 10 days later the effective number of embryos is announced.

The successful embryos are in turn frozen. The success of freezing is high because the embryos are frozen at an early stage.

Frozen embryos can be transplanted into a carrier mare at a time of choice during the breeding season.

Why choose OPU/ICSI

The OPU and ICSI techniques can be applied to mares that can no longer become or remain pregnant (e.g. due to chronic uterine infection, cushing, ...) or mares whose embryos cannot be flushed. Sport mares can also be offered. In this way, embryos can be made with a one-time treatment and without hormonal interventions.

By means of ICSI it becomes possible to use stallions that are less fertile. The frozen semen can be used more efficiently. One frozen straw can be used for about eight OPU sessions.

Expectations

Case

During the OPU session 20 follicles will be punctured. This results in 13 immature oocytes leaving for Avantea, Italy. The 13 unripe oocytes are matured from which 8 mature oocytes originate. The mature oocytes are in turn fertilized (ICSI) after which there are 1.5 developed embryos.

The success rate of gestation after transplanting a frozen ICSI embryo into a surrogate mare is about 70%.

Early embryonic mortality is about 8% - 15%.

Requirements donor mare(s)

It is recommended to have the mare checked at home before offering her to Keros. We recommend to do the check-up and the tests two weeks in advance. The mare should have at least 15 follicles (between 1 cm and 2 cm) on her ovaries.

A. Health tests

Before being able to participate in an OPU session, a number of health tests have to be carried out. This is necessary to comply with the strict regulations concerning the export of the oocytes to Avantea, Italy and the re-importation of the embryos to Keros, Belgium. The results of the tests must be completely negative and must be presented to Keros nv at least 3 days before the OPU session. The results from the date of sampling remain valid for 90 days. It may therefore be necessary to perform these tests again if they have expired. Samples can be taken by your own veterinarian and should be sent to an authorized laboratory such as Wageningen Bioveterinary Research department DSU in Lelystad.

B. Samples to be taken

1. Blood sample
Test to be performed: EIA03 Equine Infect. Anaemia (Elisa)
2. Two clitoral swabs
 - a. Fossa Clitoralis
 - b. Clitoral SinusesTest to be performed: CEM5 T. Equigenitalis (CEM) PCR

C. Remarks

The swabs taken must be placed in a transport medium with activated carbon and must be sent refrigerated. Samples must be received by the laboratory within 24 hours after collection.

Additional information

During the OPU session there is a possibility of complications mentioned in the literature, such as rectal tearing, bleeding, peritoneal inflammation, abscess, (temporary) paresis of the hindquarters, epidural space infection, death.

Some mares that have undergone an OPU procedure may be uncomfortable, may have an elevated temperature the next day or may be fuzzy for a few days.

OPU can be repeated approximately every 21-28 days. The time between the two consecutive OPU sessions depends on the number of follicles that develop in the 3 week period.

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Tariffs

Performance	Tariffs (excl. VAT)	Remarks
Sample collection	€ 50,-	Incl. transport
Sample research	€ 115,50	Via Wageningen
OPU (Ovum Pick Up)	€ 1.000,-	Incl. transport
Maturation oocytes	€ 150,-	
ICSI	€ 380,-	
Per frozen embryo	€ 420,-	Price per embryo
Embryocertificate	€ 20,-	On request Price per certificate

Example

1. If you do not obtain an embryo: € 1.695,50 (excl. VAT)
2. If you obtain 1 embryo: €2.115,50 (excl. VAT)
3. If you obtain 2 embryos: €2.535,50 (excl. VAT)

Performance	Recipient mare Keros	Own recipient mare
Thawing embryo	€ 200,-	€ 200,-
Lease recipient mare incl transfer	€ 2.800,-	€ 350,- / transfer
Stabling	Free of charge for 50 days	€ 10,-

It is agreed between Keros and the client :

A. THE CLIENT

The client will obtain all necessary documents and authorizations for OPU, ICSI, embryo transfer, breeding certificates and other documents for the registration of the foal in the appropriate studbook.

The client is familiar with the techniques of OPU, ICSI and embryo transfer utilized by Keros and accepts the inherent risks of these techniques. The techniques contain risks to the health and well-being of the horse and embryo which can result in permanent lesions or death of embryo and/or horse. By entrusting Keros with these tasks the client implies that he accepts these risks.

The professional liability insurance of Keros, may cover the liability of Keros and its representatives when damage results from errors. However, the liability for damage resulting from errors is always and without exception limited to a maximal amount of 100.000 € (hundred thousand euros) per horse, all included and nothing excluded.

By signing the present agreement, the client explicitly renounces to all claims for all damage that exceed the maximal amount of 100.000 € (hundred thousand euros) per horse as well as for all damage that is not part of the professional liability insurance of Keros, regardless of the kind of damage or the circumstances causing the damage.

B. KEROS

Keros will complete all necessary administrative and regulatory steps for the correct execution of OPU/ICSI and embryo transfers that are confided to Keros. Keros is committed to use the state-of-the-art methods in order to obtain the best possible results. Keros preserves the right to choose the most appropriate techniques for embryo collection and transfer. Keros has an obligation of means but no obligation of results.

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C. CIVIL RESONSIBILITY CLAUSE

It is explicitly agreed upon that only the client is responsible for damage caused by the recipient mare to himself or third parties while under the care of the client, regardless of the circumstances that caused the damage to occur.

D. CHOICE OF LAW AND JURISDICTION

Only Belgian law applies on the present agreement. All disputes are subject to the exclusive jurisdiction of either the Commercial Court of Ieper or the Court of First Instance, Ypres or the Peace Court of the District Wervik.

E. REMARKS

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Made up in as many copies as there are parties. Each party declares to have received his/her copy.

Done in _____ on _____

The client
(read and agreed)

Your personal data will be processed by Keros NV () for customer management based on the contractual relationship resulting from your order/purchase and for direct marketing based on our legitimate business interest. If you do not want us to process your data for the purpose of direct marketing, please inform us at info@keros.be. Via that address you can also always ask us what data we process about you and correct it or have it erased, or ask us to transfer it. If you do not agree with the way in which we process your data, you can contact the Commission for the protection of personal privacy (Drukpersstraat 35 at 1000 Brussel). A more detailed overview of our data processing policy can be found at www.keros.be.*

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