

OPU/ICSI

Ovum pick-up (OPU)/intracytoplasmic sperm injection (ICSI)



Ovum pick-up (OPU)/intracytoplasmic sperm injection (ICSI) is a form of in-vitro fertilization (IVF), now used widely in horses. It is the process by which an oocyte (egg) is harvested from the mare before ovulation, matured in a lab and fertilized by injection of a single sperm into the egg, to produce an embryo which can then be transferred into a recipient mare.

WHY USE OPU/ICSI?

Mare fertility issues

- Mares unable to produce an embryo. Unlike in conventional embryo transfer, OPU/ICSI bypasses the need for normal in-vivo embryo production and so is a valuable tool in mares unable to produce embryos naturally.
- Mares whose subfertility/infertility problems are thought to be related to oocyte quality. OPU/ICSI can be a useful diagnostic tool in these cases.

Stallion issues

- Limited sperm availability- since a single sperm only is required for ICSI, the technique is useful for stallions

with limited semen stocks. In addition, the same straw can be used for multiple ICSI sessions and even re-frozen, optimizing efficient use of valuable semen.

- Reduced fertility- OPU/ICSI can be successfully performed in certain stallions with poor semen quality.

Competition mares

OPU/ICSI has the following advantages in competition mares:

- Can be scheduled for a single appointment to suit competition schedule, including outside the breeding season.
- No hormonal treatment or repeated scanning required.

Other

- OPU/ICSI can be performed outside the breeding season.
- Embryos can be transferred fresh to a recipient mare or frozen for transfer to a recipient when convenient, thereby removing the need to synchronize a recipient.
- Eggs can also be harvested around the time of death of a mare.

Continued overleaf

THE PROCEDURE

OPU is performed with the mare sedated in the stocks. The ovary is visualized using a transvaginal ultrasound probe, and a long needle is passed through a guide in the ultrasound handle, through the wall of the vagina, and into the follicle. The follicle is then flushed several times and the egg is aspirated out of the follicle.

The eggs are then placed in a transport medium and shipped overnight to an ICSI lab where they will be matured, and fertilized by ICSI. The injected egg is then placed in different media for culture into an embryo. The process of development into a transferrable embryo usually takes 6-8 days. The embryo can then be transferred fresh to a recipient mare, or frozen.

REQUIREMENTS

1. The mare should undergo health testing for Equine Viral Arteritis (EVA), Equine Infectious Anaemia (EIA) and Contagious Equine Metritis (CEM) prior to admission to our clinic for the procedure.
2. In order to maximize success rates, the mare should have at least 15 small follicles at the time of the procedure.

Please do not hesitate to contact B&W Stud and Reproduction Services if you have further questions regarding this service.



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