BUSOL 0.004 mg/ml

Solution for injection for cattle, horses and rabbits

Buserelin

RIGHT ON TIME

HIGH AFFINITY

Qualitative and quantitative composition
Each ml contains: Active substance: Buserelin (as Buserelin acetate) 0.004 mg/ml.

Target species
Cattle, horse, rabbit.

Indications for use specifying the target species
Cattle: Early cycle induction post partum. Treatment of follicular cysts. Improvement of conception rate in artificial insemination procedures, also after synchronisation of oestrus with a PGF2α analogue. Results may however vary depending on breeding conditions.
Mare: Induction of ovulation to synchronise ovulation more closely with mating. Improvement of conception rate.
Rabbit: Improvement of conception rate. Induction of ovulation in post partum insemination.

Contraindications
None.

Special warnings for each target species
Treatment with a GnRH analogue is only symptomatic; the causes underlying a fertility disorder are not eliminated by this treatment.

Special precautions for use
Special precautions to be taken by the person administering the veterinary medicinal product to animals: Avoid eye and skin contact with the solution for injection. In case of accidental eye contact, rinse thoroughly with water. Should skin contact with the product occur, wash the exposed area immediately with soap and water, as GnRH analogues may be absorbed through the skin.
When administering the product, care should be taken to avoid accidental self-injection by ensuring that animals are suitably restrained and the application needle is shielded until the moment of injection.
Because of the potential for effects on reproductive function, women of child-bearing age should handle the product with caution.
Pregnant women should not administer the product.
In case of accidental self-injection, seek medical advice immediately and show the package insert or the label to the physician.

Adverse reactions (frequency and seriousness)
None known.

Use during pregnancy, lactation or lay
The product is intended for use to improve pregnancy rate, induce ovulation etc. and should therefore be used prior to mating or insemination and not during pregnancy.

Interaction with other medicinal products and other forms of interaction
No data available.

Amounts to be administered and administration route
Cattle: Fertility disorders of ovarian origin, in particular: Follicular cysts with or without symptoms of nymphomania: 5 ml of Busol (20 µg of Buserelin); Early cycle induction post-partum: 5 ml of Busol (20 µg of Buserelin); Improvement of conception rate in artificial insemination procedures, also after synchronisation of oestrus with a PGF2α analogue. (Results may however vary depending on breeding conditions): 2.5 ml of Busol (10 µg of Buserelin).
Mares: Induction of ovulation to synchronise ovulation more closely with mating. (If ovulation has not occurred within 24 hours after treatment, then the injection should be repeated.): 10 ml of Busol (20-40 µg of Buserelin); Improvement of conception rate: 10 ml of Busol (20-40 µg of Buserelin).
Rabbits: Improvement of conception rate: 0.2 ml of Busol (0.8 µg of Buserelin); Induction of ovulation in post-partum insemination: 0.2 ml of Busol (0.8 µg of Buserelin).
The product is preferably given by intramuscular injection. The intravenous or subcutaneous route may also be used. The product should be administered once.

Overdose (symptoms, emergency procedures, antidotes), if necessary
No data on overdosing are available.

Withdrawal periods
Cattle, horses, rabbits: Meat and offal: 0 days.
Cattle, horses: Milk: 0 hours.

Special precautions for storage
Store in a refrigerator (2 °C – 8 °C). Do not freeze.

References
1. Lucy, M.C. Reproductive Loss in High-Producing Dairy Cattle: Where Will It End? *Journal of Dairy Science.* 84:1277–1293 (2001).
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5. Newcombe, J.R., Martinez, T.A., Peters, A.R. The effect of the gonadotropin-releasing hormone analog, Buserelin, on pregnanc rates in horse and pony mares. Theriogenology, n. 55, pag 1619-1631, (2001).
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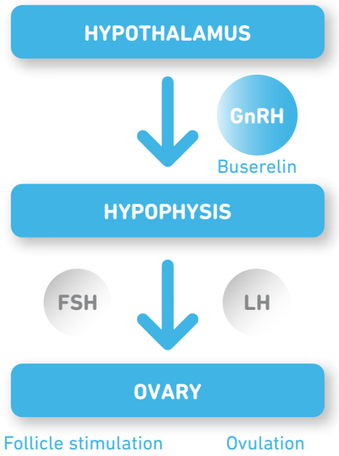
THE CONTROL OF REPRODUCTION

Hormones such as GnRH analogues are widely used in both practice and production systems.[1]

Fertility programs in dairy cattle use these analogues to improve fertility results and reduce the variability in oestrus cycle.[1] In mares, they can improve fertility and pregnancy rate.[6]

BUSERELIN

Mechanism of action



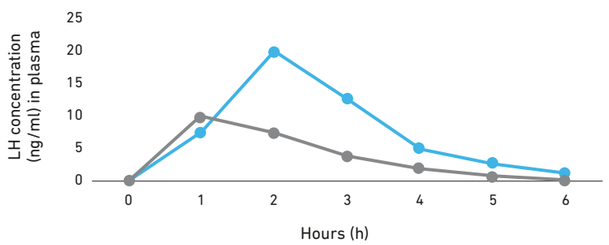
Buserelin is an **analogue** of **Gonadotrophin releasing hormone (GnRH)**, which acts on the hypophysis and controls the oestrus cycle by activating the release of FSH (Follicle Stimulating Hormone) and LH (Luteinising Hormone). These regulate the maturation and release of the eggs (ova).

Buserelin is used in the control of the reproductive cycle in livestock **so that insemination is performed at the optimum time relative to ovulation.**

Buserelin vs. Gonadorelin

Buserelin is a modified analogue of Gonadorelin, the pharmaceutical form of the natural molecule.[2] Buserelin has a nonapeptide conformation that grants **higher affinity for the receptor,** being more potent than Gonadorelin. Buserelin induces the LH surge that triggers ovulation.[3,4]

FIGURE: LH concentration after treatment with buserelin and gonadorelin



BUSERELIN produces a higher LH surge compared to Gonadorelin

Buserelin (10µg)
Gonadorelin (100µg)

Plasma LH concentrations (ng/ml) after treatment with buserelin and gonadorelin on heifers 6-7 days after oestrus, using product doses. (Adapted from Picard-Hagen et al 2015).[4]

RIGHT ON TIME

BUSOL is an injectable buserelin, indicated for induction of ovulation and improvement of the conception rate in cattle, horses and rabbits, as well as for treatment of ovarian follicular cysts in cattle.

HIGH AFFINITY

BUSOL's greater affinity for the GnRH receptor makes it **50 times more potent than Gonadorelin.**

IMPROVEMENT OF CONCEPTION RATE

BUSOL is **the only UK licensed GnRH analogue** indicated for improvement of conception rate in mares.

IN COWS,

BUSOL is used in reproductive protocols to synchronise oestrus and ovulation, thus **enabling insemination at the optimal time.**
It saves time spent on heat detection and improves fertility results.

BUSOL's potency makes it a great treatment choice against follicular ovarian cysts.

IN MARES,

BUSOL is indicated for the induction of ovulation to synchronise ovulation more closely with mating.

Used 8 to 12 days after service, BUSOL **increases the overall pregnancy rate by up to 10%** increasing embryo survival.[5,6]

IN DOES,

BUSOL allows does to ovulate without the neurohormonal reflex which is naturally initiated during mating and improves the conception rate.[7,8]

Cattle:
2.5–5 ml of BUSOL

Horses:
10 ml of BUSOL

Rabbits:
0.2 ml of BUSOL