

Suprelorin®

DESCRIPTION

Suprelorin® is a safe, biocompatible injectable implant, for the temporary suppression of fertility and reduction of testosterone in male dogs.

The implant contains a biocompatible lipid matrix (saturated triglyceride) which provides a sustained release of Deslorelin over time. The implant is a solid, opaque, white to pale yellow cylinder approximately 2.3 mm x 12.5 mm length.



KEY PROPERTIES AND BENEFITS

- All the advantages of castration without the surgery.
- A unique treatment in veterinary medicine.
- Central level mode of action.
- As simple as microchipping.
- Reversible down regulation of male dogs' hormones.
- Rapid and lasting lowering of testosterone levels.
- Temporary infertility.
- Proven safety.

PRECAUTIONS

Pregnant women and others of childbearing age should exercise caution when handling this product. Direct contact should be avoided.

INDICATIONS

- Non-surgical castration.
- Owners who do not want surgery but still require the benefits of castration.
- Dogs where surgery is contraindicated due to anaesthetic risk.

CLINICAL EFFECTS

- Rapid reduction of testosterone.
- Decrease of the libido.
- Decreased spermatogenesis.
- Induces temporary infertility.
- Reduction in the size of testicles by approximately one third.

COMPOSITION

Deslorelin acetate 4.7mg Suprelorin®.

DOSAGE AND DIRECTIONS

1. Remove the Luer Lock cap from the implant.
2. Place 1 implant subcutaneously between the shoulder blades of the dog.
3. Administer one implant only, irrespective of the size of the dog.
4. It is necessary to keep treated animals away from bitches on heat for 4–6 weeks following implantation. (This precaution does not apply to repeated sequential doses administered immediately at the end of duration of a previous dose).
5. Repeat treatment every 6 months.

PRESENTATION

Boxes of two implants preloaded in implanters.

STORAGE

Store at 2°C to 8°C (refrigerate, do not freeze).

ACVM NUMBER A9158.

Suprelorin® is a Registered Veterinary Medicine. Available only under Veterinary Authorisation. Registered Pursuant to the ACVM Act 1997.

Suprelorin®

MODE OF ACTION

Deslorelin acts by suppressing the function of the pituitary gonadal axis when applied in a low, continuous dose. This suppression results in the failure of treated animals to synthesise and/or release follicle stimulating hormone (FSH) and luteinising hormone (LH), the hormones responsible for the maintenance of fertility.

A specific site of action: central target

The active, Deslorelin, targets GnRH receptors specifically. These receptors are primarily located in the anterior lobe of the pituitary gland (adenohypophysis)¹.

Down-regulation / desensitisation of GnRH receptors

Sustained, low level administration of GnRH analogues causes down regulation of the GnRH receptors in the pituitary gland². There is also a parallel desensitisation of Leydig cells to luteinising hormone³, a well-known and widely studied mechanism in a variety of species. This desensitisation appears to occur as a result of internalisation and degradation

of GnRH receptors within cells, more rapidly than they can be replaced⁴. The process is believed to begin with the receptor becoming phosphorylated by G-Protein Coupled Receptor specific kinases followed by β -arrestin binding and targeting the receptor for internalisation.

Suppression of testosterone production and spermatogenesis

Sustained treatment with Deslorelin results in decreased LH and FSH, leading to a suppression of serum testosterone and an inadequate environment for sperm production (e.g. disruption of the cytoarchitecture of the seminiferous tubules^{5,6,7}) and loss of reproductive function.

TIME TO EFFECT

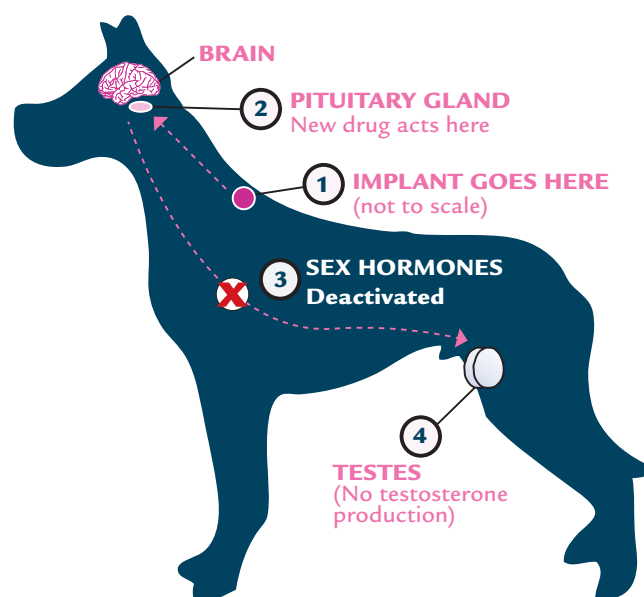
After implantation, there is an initial increase in plasma testosterone, then, a rapid decrease to an undetectable level (below 0.4 ng/ml) within 9 to 20 days of implantation⁸.

SAFETY

- Minimal side effects⁹.
- No significant effects have been observed on general health, behaviour, food consumption, bodyweight or clinical chemistry and haematology.
- No interactions with other drugs used concomitantly.
- No anaesthetic, no surgery, no scarring.

REVERSIBILITY

With respect to testosterone levels during clinical trials, more than 80% of dogs (53/63) administered one or more Suprelorin® implants returned to normal plasma testosterone levels (>0.4 ng/ml) within 12 months of implantation. Ninety-eight percent of dogs (62/63) returned to normal plasma testosterone levels within 18 months of implantation¹⁰.



Subcutaneous implantation for a central site of action

1. Ramakrishnappa et al. GnRH in non-hypothalamic reproductive tissue. *Animal Reproduction Science* 2005; 88(1-2):115-126. 2. Parker K. L. and Schimmer B. P. Pituitary hormones and their hypothalamic releasing factors In: Goodman and Gilman's *The pharmacological basis of therapeutics*. 10th Edition, Eds. Hardman J. G., Limbird L. E. and Gilman A. G. 2001; 56, 1541-1562. 3. Junaidi, A. et al. Pituitary and testicular endocrine responses to exogenous gonadotrophin-releasing hormone (GnRH) and luteinising hormone in male dogs treated with GnRH agonist implants. *Reproduction, Fertility and Development*. 2007;19:891-898. 4. Rispoli, L.A. and Nett, T.M. Pituitary gonadotrophin releasing hormone (GnRH) receptor. Structure, distribution and regulation of expression. *Animal Reproduction Science* 2005;88:57-74. 5. Vickery, B.H. et al. Effect of an LHRH agonist analog upon sexual function in male dogs: suppression, reversibility and effect of testosterone replacement. *Journal of Andrology* 1984;5(1):28-42. 6. Gilbert R. O. and Bosu W. T. K. Clinical reproductive endocrinology of the dog and cat. In: *Small animal endocrinology*. Eds. Drazner F. H., New York. 1987, 341-365. 7. Shille V. M. Reproductive physiology and endocrinology of the female and male. In: *Textbook of internal veterinary medicine*. 3rd Edition, Eds. Ettinger S. E. 1989, 1788-1790. 8. Data on file. Trigg T. E. (2002) Trial report PT14: Suprelorin® clinical study report. 9. Trigg, T.E. et al. A review of advances in the use of the GnRH agonist deslorelin in control of reproduction. *Theriogenology* 2006;66:1507-1512. 10. Trigg, T. E. et al. Use of a GnRH analogue implant to produce reversible long-term suppression of reproductive function in male and female domestic dogs. *Journal of Reproduction and Fertility Supplement* 2001;57:255-261.