

SUPRELORIN® (deslorelin) IMPLANTS

Manufacturer – Peptech Animal Health, Australia

Product information – Suprelorin® (deslorelin), a GnRH agonist, effects contraception by temporarily suppressing the reproductive endocrine system and preventing production of pituitary (FSH and LH) and gonadal hormones (estradiol and progesterone in females and testosterone in males). The observed effects are similar to those following ovariectomy or castration, but are reversed after the hormone content of the implant is depleted. As an agonist, deslorelin first stimulates the reproductive system, which can result in estrus and ovulation in females or temporary enhancement of testosterone and semen production in males. Then, down-regulation follows the initial period of stimulation. Although deslorelin can also be an effective contraceptive in males, we recommend its use primarily in females, since monitoring efficacy in females by suppression of estrous behavior or gonadal steroids in feces is more straightforward than ensuring continued absence of sperm in males, since most institutions cannot perform regular semen collections. It can, however, be used to ameliorate aggression in males but higher dosages are usually needed.

Deslorelin implants are available in two formulations: 4.7-mg for a minimum of 6-month, and 9.4-mg for a minimum of 12-month contraception. Deslorelin has been tested primarily in domestic dogs and cats, which makes it most suitable for carnivores, and it has successfully reduced aggression in male lion-tailed macaques. However, it appears not to be effective in male bovids or marsupials. It is currently in use in a number of species but the primary taxonomic group treated has been carnivores.

Storage and Expiration – Implants should be stored at refrigeration temperatures (4°C). Expiration date is stamped on individual implant packages. If implant expires prior to placement, contact Sally Boutelle (contraception@stlzoo.org) for the actual longevity of the implant.

Insertion – The implant comes pre-loaded in an insertion device. The recommended site of implant placement is SQ between the shoulder blades. The area should be clipped and cleaned using standard surgical prep techniques. A fold of skin should be lifted and held between the thumb and fingers as the obturator (sent with the implant) is inserted. To prevent breakage of the implant during insertion, the barrel of the obturator should be slowly withdrawn as the implant is expelled. The implant should be held steady as the obturator is removed to insure release of the implant so that it remains in place under the skin.

Latency to effectiveness - Because the initial effect is to stimulate the reproductive

system, it is important to either separate treated animals from opposite sex individuals during the period of enhanced fertility or use another form of contraception. Females treated with deslorelin should be considered fertile for 3 weeks following insertion. Males may remain fertile for 2 or more months, until residual sperm either degenerate or are passed (as following vasectomy). Lessening of aggression in some male primates treated with deslorelin or other GnRH agonists was not seen for 6-12 months, but the delay may have been due to an inadequate initial dose.

Suppression of initial estrus/ovulation – The estrus and ovulation that can occur within 2 weeks following implant insertion can be suppressed with supplemental progestin treatment for 15 days (7 days prior to and 8 days after implant insertion). [Megestrol acetate](#) tablets are the simplest form for short-term progestin administration, with the tablet offered as a treat to insure ingestion. Depo-Provera® should not be substituted for Megestrol acetate, because its initial high levels and sustained release can interfere with Suprelorin® efficacy. MGA implants can be left in place for 2-3 weeks following Suprelorin® implant insertion, but then should be removed to prevent interference with the down-regulation action. Leaving them in place longer may compromise Suprelorin® efficacy.

Estrous cycles during contraceptive treatment - Deslorelin first stimulates, then suppresses estrus in females. Species with induced ovulation (e.g., felids, some mustelids, bears) may ovulate and become pseudo-pregnant (also canids) when first treated. In males, initial stimulation may be accompanied by increased aggression or sexual interest. Estrous behavior or even copulation may occur during a transition phase near the end of the period of contraceptive efficacy.

Duration of efficacy and reversibility – A new 12-month formulation containing 9.4mg deslorelin should be effective for approximately twice as long as the smaller (4.7mg) implants that have been supplied in the past. However, the dose needed per-kg-body-weight with the new 9.4mg implants is about twice that of the existing 4.7mg implants. For animals effectively contracepted for 6 months with two 4.7mg implants, two 9.4mg implants will be necessary, but the period of efficacy will be double (12 months). For 6 months contraception, one 9.4mg implants will not substitute for two of the 4.7mg ones. These dose recommendations should only serve as general guidelines, because individual animals may respond differently. Stated durations of efficacy should be considered minimums. The smaller implants may actually be effective for more than 6 months, and the larger ones for more than 12 months, in some animals. Data from various species have shown, responses may vary widely between individuals, but that the response from one individual tends to be consistent and if an individual reverses earlier than expected it will consistently do so. If it is not possible to wait for signs of reversal to determine duration of efficacy for the animal, then for continuous contraception the small implants should be replaced at 5- to 6-month intervals and larger ones at 11- to 12-month intervals.

Use during pregnancy – GnRH agonists should not be used during pregnancy, as they may cause abortion.

Use during lactation - No known contraindications once lactation has been

established; however, treatment during pregnancy may impede proper mammary development.

Use in pre-pubertals or juveniles – Because deslorelin suppresses gonadal steroids, its use may delay epiphyseal closure of the long bones, resulting in taller individuals, similar to the effects of pre-pubertal spaying and neutering in domestic dogs and cats. GnRH agonist use in prepubertal domestic cats was followed by reproductive cycles after treatment ceased. However, species differences may occur.

Consideration for seasonal breeders – In females, GnRH agonists can induce estrus and ovulation even during the non-breeding season in some taxa. In males, GnRH agonists can transiently stimulate testosterone production even during the non-breeding season. Treatment should begin more than two months prior to the anticipated breeding season to prevent initiation of spermatogenesis, because it appears that suppression of sperm production is more easily accomplished before it has commenced and time must be allowed for passage of residual sperm, as following vasectomy.

Precautions - In general, the effects on weight should be similar to those from ovariectomy or castration. Preliminary data indicate that increased appetite will result in weight gain, especially in females, unless food is restricted. In males, muscle loss may result in overall weight loss if not replaced by fat. In sexually dimorphic species, males may become the size (weight) of females. Animals may lose secondary sex characteristics (e.g. lions may lose the mane while being treated with deslorelin).

Reporting requirements - All institutions using deslorelin must submit a complete [Contraception Center Survey](#) to the AZA Wildlife Contraception Center. ***The product will no longer be sold to any institution that fails to submit the annual survey.***

Request for purchase - Deslorelin implants are available to AZA accredited institutions as part of a research trial coordinated by the AZA Wildlife Contraception Center as part of an agreement with Peptech Animal Health, Australia. This product is not commercially available in the United States at this time. For those institutions outside the U.S. interested in deslorelin, contact Peptech Animal Health directly for information at www.peptech.com. For AZA accredited institutions in the U.S. please submit the [Deslorelin Agreement Form](#) to:

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