GnRH agonist - Leuprolide acetate (Lupron®)

Fact Sheet Complied by: **Kirsten Pullen**

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Commercial Name:	Lupron ®
Contraceptive Product:	Leuprolide acetate
Product Category:	GnRH agonist (depot injection)
Product Availability:	Available through human drug distributors
Restrictions and/or permit required by Importing Country:	Current knowledge: no import licence required. **EGZAC recommends always checking with your local licensing authority**
Mechanism of action:	GnRH agonists work 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. GnRH agonists first stimulate the reproductive system, which can result in oestrus and ovulation in females or the temporary enhancement of testosterone and semen production in males. Then, down-regulation follows the initial period of stimulation.
Product information	Although GnRH agonists can also be an effective contraceptive in males, we recommend its use primarily in females, since monitoring efficacy in females by suppression of estrous behaviour or gonadal steroids in faeces 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. **See taxon sheets.**
Delivery Route and dose:	Injectable **EGZAC recommends always reading the manufacturer's data sheet**
Females	
Latency to effectiveness:	Generally 3 weeks following insertion
Oestrus cycles during contraceptive treatment:	Initial oestrus and ovulation can occur, then no oestrus cycle. The oestrus and ovulation that can occur within 3 weeks following implant insertion can be suppressed with supplemental progestin. Treatment for 7 days before and 7 days after.
Managing of initial stimulation phase:	1) separation of sexes for 3 weeks; 2) Oral Megestrol acetate pills daily, 7 days before and 7 days after; 3) Pre-existing progestagen implants can be left in place for 1 week after insertion of GnRH

	agonist; leaving them in place may compromise GnRH agonist efficacy. Depo-Provera should not be used as product interference may occur.
Use during pregnancy:	Not recommended, can cause abortion
Use during lactation:	GnRH agonists have no known contra-indications once lactation has started; however, treatment during pregnancy may impede proper mammary development
Use in prepubertals or juveniles:	Because GnRH agonists suppress gonadal steroids, their 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.
Use in seasonal breeders:	GnRH agonists should be given more than 2 months prior to expected breeding season
Duration	Available in various formulations lasting from 1 to 6 months, actual duration of efficacy can show individual variation
Reversibility	Data deficient
Effects on Behaviour	Data deficient
Effects on sexual physical characteristics	GnRH agonists may cause the supression of physical secondary sexual characteristics. Species with induced ovulation may ovulate and become pseudo-pregnant when first treated. **See taxon sheets**
Males	
Latency to effectiveness:	Males may remain fertile for 2 or more months following insertion
Use in prepubertals or juveniles:	Because GnRH agonists suppress gonadal steroids, their 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.
Use in seasonal breeders:	GnRH agonists should be given more than 2 months prior to expected breeding season
Duration	Available in various formulations lasting from 1 to 6 months, duration of efficacy can show individual variation.
Reversibility	Data deficient
Effects on Behaviour	Data deficient. The initial stimulation of testosterone may be accompanied by increased aggression or sexual interest. GnRH agonists may affect androgen-dependant behaviours. **See taxon sheets**
Effects on sexual physical characteristics	GnRH agonists may affect androgen-dependant characteristics causing suppression of physical secondary sexual characteristics. **See taxon sheets**
General:	
Side effects	In general weight gain as would be seen with ovariectomy or castration. Increased appetite will result in weight gain, especially in females. Males may lose muscle and overall weight if not

	replaced by fat. Males may become the size (weight) of females. **EGZAC recommends always reading the manufacturer's data sheet**
Warnings	GnRH agonists may not be effective in male bovids, wild dogs or marsupials.
Reporting Requirements: In order to increase our knowledge of the efficacy of contraception methods it is recommended that all individuals on contraception be reported to EGZAC	

References:

1) **http://www.stlzoo.org/downloads/Lupron.pdf**

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