

**Primates: Hylobatidae**



Fact Sheet Compiled by: Yedra Feltrer MSc MRCVS ZSL veterinary officer

Last Updated: March 2014

Fact Sheet Reviewed by: Sally Boutelle MS

Contraceptive methods:	GnRH agonist (implant)	GnRH agonist (injection)	Progestagen (implants)	Progestagen (implants)	Progestagen (injection)	Combination Birth-Control Pills	Progestagen only Birth-Control Pills	Surgical/ Permanent
<b>Contraceptive Product:</b>	Deslorelin acetate	Leuprolide acetate	Etonogestrel 68 mg	Levonorgestrel 2x 75mg	medroxyprogesterone acetate	Combinations of a synthetic progestagen and oestrogen at various doses are available	Oral synthetic progestagens without any oestrogen component	N/A
<b>Commercial Name:</b>	Suprelorin®	Lupron®	Implanon® Nexplanon®	Jadelle®	Depo-Provera®, Depo-Progevera®,	Several commercial oral combination pills are available in the market for human use.	Several commercial oral progestagen pills are available in the market for human use.	Vasectomy
<b>Product Availability:</b>	4.7mg ('Suprelorin 6') and 9.4 mg ('Suprelorin 12') widely available through veterinary drug distributors in the EU. 9.4 mg ('Suprelorin 12') is also available through Peptech Animal Health, Australia.	Leuprolide acetate licenced for human use	Manufactured by Organon. Available through human drug distributors	Manufactured by Organon. Available through human drug distributors	Manufactured by Pfizer. Widely available throughout Europe through human drug distributors.	Widely available in pharmacies for human use	Widely available in pharmacies for human use	N/A
<b>Restrictions and/or permit required by Importing Country:</b>	EGZAC recommends: always check with your local licencing authority	Data deficient	EGZAC recommends: always check with your local licencing authority	EGZAC recommends: always check with your local licencing authority	EGZAC recommends: always check with your local licencing authority	N/A	N/A	N/A
<b>Mechanism of action:</b>	GnRH agonist suppress the reproductive endocrine system, preventing production of pituitary and gonadal hormones. As an agonist of the GnRH initially stimulates the reproductive system -which can result in oestrus and ovulation in females or temporary enhancement of testosterone and spermatogenesis in males- therefore additional contraception needed during this time. Please see below and refer to Deslorelin datasheet for detailed information.	GnRH agonist suppress the reproductive endocrine system, preventing production of pituitary and gonadal hormones	Interference with fertilization by thickening cervical mucus, interrupting gamete transport, disruption of implantation, inhibition of LH surge necessary for ovulation	Interference with fertilization by thickening cervical mucus, interrupting gamete transport, disruption of implantation, inhibition of LH surge necessary for ovulation	Anti-estrogenic activity. Interference with fertilization by thickening cervical mucus, interrupting gamete transport, disruption of implantation, inhibition of LH surge necessary for ovulation	Inhibit follicular development and LH surge preventing ovulation. Progestagen part also blocks fertilisation and/or implantation.	Interference with fertilization by thickening cervical mucus, interrupting gamete transport. Disruption of implantation. Inhibition of the LH surge necessary for ovulation. These mechanisms are dose dependant, typically higher dose of synthetic progestagens are required to block ovulation than to block fertilisation and/or implantation.	Surgical procedure in which the ductus deferens are cut, tied, cauterized, or otherwise interrupted



<b>Duration</b>	Duration of efficacy has not been well established as a guide: 4-7 mg implants will suppress for a <b>minimum</b> of 6 months; 9.4mg will be effective for a <b>minimum</b> of 12 months	Not well established, duration of effect being likely related to the dose. Higher doses result in longer duration of effect. <b>This is extremely data deficient</b>	2-3 years in various primates	2-3 years in various primates	Dose dependant: 45-90 days in general. However, effects could last 1-2 years in some individuals.	More than 1 day as effective during the placebo week in human. Duration for other species not fully established.	Not more than one day. Pills need to be administered daily (follow packet insert instructions if one day is missed).	N/A
<b>Reversibility</b>	Considered reversible but every species has not been tested. duration to reversibility extremely variable. Removal of implant to aid reversibility is recommended.	Considered reversible but every species has not been tested. duration to reversibility extremely variable. Removal of implant to aid reversibility is recommended.	Designed to be fully reversible but individual variations can occur. -To increase potential for full reversibility implants must be removed. A reversal has been reported in a female agile gibbon who became pregnant 2 years after removal of the implant.	Designed to be fully reversible but individual variations can occur. To increase potential for full reversibility implants must be removed.	Designed to be fully reversible but individual variations can occur	Reversibility is unknown but presumably would occur after cessation of treatment, although return to cycling can vary per individual. Even in humans, it may take several months (cycles) before normal ovulation returns.	It should be reversible after cessation of treatment, although return to cycling can vary per individual. Even in humans, it may take several months (cycles) before normal ovulation returns.	N/A
<b>Effects on Behaviour</b>	None observed except lack of libido. There are anecdotal reports of change of hierarchy with the behavioural implications that this may have.	Same as deslorelin	Effects on behaviour have not been studied, every individual may react differently. Because progestagens can suppress ovulation it can be expected that courtship and mating behaviour will be affected in some way. Further research in the subject is necessary.	Effects on behaviour have not been studied, every individual may react differently. Because progestagens can suppress ovulation it can be expected that courtship and mating behaviour will be affected in some way. At high doses can have masculinising effect. Further research in the subject is necessary.	Effects on behaviour have not been studied, every individual may react differently. Because it binds readily to androgen receptors and is antiestrogenic, females may experience male-like qualities (increased aggression, development of male secondary sex characteristics, etc.) Further research in the subject is necessary.	Effects on behaviour have not been studied, every individual may react differently. Further research in the subject is necessary.	Effects on behaviour have not been studied, every individual may react differently. Further research in the subject is necessary.	N/A
<b>Effects on sexual physical characteristics</b>	Some dichromatic species may change colour. Loss of muscle mass may also be seen.	Some dichromatic species may change colour.	There might be some degree of sexual swelling and menstruation might occur. Ovulation may also occur even though pregnancy does not ensue.	There might be some degree of sexual swelling and menstruation might occur. Ovulation may also occur even though pregnancy does not ensue.	See above	Data deficient	Data deficient	N/A
<b>Males</b>	<b>Data deficient</b>	<b>Data deficient see comment for deslorelin</b>	<b>Not Recommended</b>	<b>Not Recommended</b>	<b>Not recommended</b>	N/A	N/A	Reported
<b>Dose</b>	Usually a higher dose than in females are required in males. <b>Data deficient</b>	Usually a higher dose than in females are required in males. <b>Data deficient</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Latency to effectiveness:</b>	Depending on the species there may be fertile sperm present in vas deferens for 6-8 weeks post treatment. Testosterone decreases after 3-4 weeks but sperm can stay fertile for many weeks after. Additional contraception needed during this time or separation of the sexes.	Depending on the species there may be fertile sperm present in vas deferens for 6-8 weeks post treatment. Testosterone decreases after 3-4 weeks but sperm can stay fertile for many weeks after. Additional contraception needed during this time or separation of the sexes.	N/A	N/A	N/A	N/A	N/A	Depending on species and individual, perhaps as long as 2 months or more
<b>Use in prepubertals or juveniles:</b>	<b>Data deficient</b> in this group, see product information sheet	<b>Data deficient</b> in this group, see product information sheet	N/A	N/A	N/A	N/A	N/A	Data deficient
<b>Use in seasonal breeders:</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Duration and Reversibility</b>	<b>Data deficient</b> , but deslorelin is considered reversible. See product information sheet.	<b>Data deficient</b> , but lupron is considered reversible. See product information sheet.	N/A	N/A	N/A	N/A	N/A	The procedure should not be used in males likely to be recommended for subsequent breeding as reversal is unlikely

<b>Effects on Behaviour</b>	Testosterone related aggression is likely to decrease. <b>Data deficient</b> in this group, see product information sheet.	Testosterone related aggression is likely to decrease. <b>Data deficient</b> in this group, see product information sheet.	N/A	N/A	N/A	N/A	N/A	Vasectomy will not affect androgen-dependant behaviours
<b>Effects on sexual physical characteristics</b>	Some dichromatic species may change colour if testosterone related. Decrease in body size, decrease testicular size, feminisation of males.	Some dichromatic species may change colour if testosterone related. Decrease in body size, feminisation of males.	N/A	N/A	N/A	N/A	N/A	None observed in non-human primates
<b>General:</b>								
<b>Side effects</b>	Similar to gonadectomy; especially weight gain. Some dichromatic species may change colour.	Similar to gonadectomy; especially weight gain. Some dichromatic species may change colour.	Possible weight gain, possible increased or decreased frequency of bleeding during menstruation. <b>EGZAC recommends always reading the manufacturer's data sheet</b>	Possible weight gain, possible increased or decreased frequency of bleeding during menstruation. At high doses can have masculinising effect. <b>EGZAC recommends always reading the manufacturer's data sheet</b>	Progestagens are likely to cause weight gain in all species. Possible deleterious effects on uterine and mammary tissues vary greatly by species; (see taxon sheets). In the human literature, Depo-Provera® has been linked to mood changes. Because it binds readily to androgen receptors and is anti-estrogenic, females may experience male-like qualities (increased aggression, development of male secondary sex characteristics, etc.) <b>EGZAC recommends always reading the manufacturer's data sheet</b>	Weight gain is less likely than with the progestagen only pills. Mood changes might occur.	Progestagens likely cause weight gain in all species. Possible deleterious effects on uterine and mammary tissues vary greatly by species. To date, few studies have shown link between synthetic progestagen treatment and serious health risk in non-human primates.	N/A
<b>Warnings</b>	Causes initial gonadal stimulation; correct administration essential - see product information sheet	Causes initial gonadal stimulation	Interaction with other drugs are known to occur and may influence protection against pregnancy. In some diabetic animals progestagens has led to an increased insulin requirement, it is advised that the product be used with caution in diabetic animals and that urine glucose levels are carefully monitored during the month after dosing. <b>EGZAC recommends always reading the manufacturer's data sheet.</b>	Interaction with other drugs are known to occur and may influence protection against pregnancy. In some diabetic animals progestagens has led to an increased insulin requirement, it is advised that the product be used with caution in diabetic animals and that urine glucose levels are carefully monitored during the month after dosing. <b>EGZAC recommends always reading the manufacturer's data sheet.</b>	Interaction with other drugs are known to occur and may influence protection against pregnancy. In some diabetic animals progestagens has led to an increased insulin requirement, it is advised that the product be used with caution in diabetic animals and that urine glucose levels are carefully monitored during the month after dosing. <b>EGZAC recommends always reading the manufacturer's data sheet.</b>	Interaction with other drugs are known to occur and may influence protection against pregnancy. In some diabetic animals progestagens has led to an increased insulin requirement, it is advised that the product be used with caution in diabetic animals and that urine glucose levels are carefully monitored during the month after dosing. <b>EGZAC recommends always reading the manufacturer's data sheet.</b>	Progestagen only contraceptive pills can fail in obese animals. Be aware that progestagen-only pills are not being as effective at suppression oestrus as the combination pills. In some diabetic animals progestagens has led to an increased insulin requirement, it is advised that the product be used with caution in diabetic animals and that urine glucose levels are carefully monitored during the month after dosing.	Infection of the surgical wound might occur. Intra-dermal closure of the skin is advised together with prophylactic antibiotic treatment and NSAID
Reporting Requirements: In order to increase our knowledge of the efficacy of contraception methods in the Hylobatidae family it is recommended that all individuals on contraception be reported to EGZAC								
References: 1) 2)								
Disclaimer: EGZAC endeavours to provide correct and current information on contraception from various sources. As these are prescription only medicines it is the responsibility of the veterinarian to determine the dosage and best treatment for an individual								