



Animal name: Banteng (*Bos javanicus*)

| Contraceptive methods | GnRH agonist (implant) | GnRH agonist (injection) | GnRH vaccine (injection) | Progestagen (implants) | Progestagen (injection) | Progestagen (oral) | PZP vaccine | Surgical/Permanent |
|--|--|--|---|--|--|--|--|---|
| Contraceptive Product: | Deslorelin acetate | Luprolide acetate | GnRH protein conjugate | Etonogestrel 68 mg | medroxyprogesterone acetate; | Altrenogest | PZP vaccine main components are antigens derived from porcine zona pellucida glycoproteins and an adjuvant to stimulate the immune response (Freund's modified complete adjuvant for primary vaccination and Freund's incomplete adjuvant for boosters). | - |
| Commercial Name: | Suprelorin® | Lupron® | Improvac® | Implanon® Nexplanon® | Depo-Provera®, Depo-Provera® | Regu-mate® | Porcine Zona Pellucida | Vasectomy |
| Product Availability: | 4.7mg (Suprelorin 6) and 9.4 mg (Suprelorin 12) widely available through veterinary drug distributors in the EU. | Luprolide acetate licenced for human use | Available through veterinary drug distributors. | Manufactured by Bayer Schering Pharma AG. Available through human drug distributors | Manufactured by Pfizer. Widely available throughout Europe through human drug distributors. | Regu-mate® Equine 2.2ml/mg oral solution and Regu-mate® Porcine 0.4% w/v oral solution widely available through veterinary drug distributors. | Not commercially available in Europe. PZP is available to ship to Europe. It is advised that you check with the licensing authority that manages the import of veterinary drugs to obtain a permit to import PZP. Once all necessary authorisations and approvals have been completed, you can order PZP from: Kimberly M. Frank The Science and Conservation Center 2100 S. Shish Road Belling, MA 01906 phone 406-652-9718 fax 406-652-9733 e-mail scgcpz@hotmail.com | - |
| Restrictions and/or permit required by Importing Country: | EGZAC recommends: always check with your local licencing authority | Data deficient | Current knowledge: widely available throughout European countries. 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 | EGZAC recommends: always checking with your local licencing authority | License required UK and France: all other Countries unknown. EGZAC recommends always checking with local licencing authority | - |
| Mechanism of action: | 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 | Production of anti-GnRH antibodies by the immune system, neutralising endogenous GnRH activity. This results in a reduction of FSH and LH production by the anterior pituitary and, ultimately, in a reduction of ovarian follicular development and/or inhibition of testosterone secretion from the testes and spermatogenesis. | 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 | Interference with fertilization by thickening cervical mucus, interrupting gamete transport, disruption of implantation, inhibition of LH surge necessary for ovulation | The PZP antibodies interfere with fertilisation by binding to the ZP glycoprotein receptors that surround the egg of the vaccinated female, blocking the binding and subsequent penetration of sperm. | Surgical procedure in which the ductus deferens are cut, tied, cauterized, or otherwise interrupted |
| Insertion/Placement: | Sub-cutaneous, in a place where it can be easily detected or seen for removal at a later date (i.e. upper inner arm); refer Suprelorin fact sheet for effective method of implant placement (tunnelisation) | Injectable | Injectable intramuscular or subcutaneously | Intramuscular or subcutaneous. EGZAC recommends sub-cutaneous, upper inner arm for visibility (and for later removal) | Injectable intramuscular | Administered orally in feed or by syringe. Gloves must be worn when administering Regu-mate® (absorption through the skin can cause disruption to the menstrual cycle and prolongation of pregnancies in humans). | Injectable Intramuscular | Surgical |
| Females | | | | | | | | |
| Dose | Dosage depends on the body weight of the individual. As a guide 1 implant should be used per 100kg BW. 4.7mg is recommended for a minimum duration of 6 months and 9.4mg is recommended for a minimum duration of 12 months. Please contact EGZAC for specific dosage advice. | There are various formulations available lasting from 1-6 months. Dosing information is not available; extrapolation from human literature is likely the best place to start. Please contact EGZAC with specific dosage advice. | Two injections of 600ug are given 4 weeks apart and boosters are usually administered every 5 months, although duration can vary between species. | 3 to 5 implants (0.068g) are recommended for successful contraception in this species. As a guideline 1 implant/100kg. | As a guide 2.5-5mg/kg BW every 45-90 days. Dosages in our database are incredibly variable, ranging from 1.13-5mg/kg BW. Please contact EGZAC for specific dosage advice. | Regu-mate® Equine: 0.044mg/kg daily; Regu-mate® Porcine: 5ml daily administered orally through feed or syringe. | 100 µg protein is recommended. The first injection would consist of 0.5mL PZP + 0.5mL adjuvant and the second injection should be given no less than 14 days after this. In species with longer breeding season, if the vaccine is given at a time other than prior to the breeding season the primary vaccination course should be given at day 0, day 21 and day 45; booster should be administered every 7-8 months. If a seasonal breeder with a well defined and short breeding season (2-3 months) then it is 1-2 months before the breeding season. | - |
| Latency to effectiveness: | Deslorelin will have a latency to effect of 3-4 weeks during which a stimulation of the reproductive system will occur. For this reason separation of both sexes is recommended for approximately 3-4 weeks. If you cannot separate the sexes, in order to suppress the initial stimulation phase, the first contraceptive bout must be supplemented with an oral progestagen such as megestrol acetate pills (Ovarid) or altrenogest (Regumate®) daily, 7 days before and 8 days after the implant is inserted. | 3 weeks average as GnRH agonists initially stimulate the reproductive system. please refer to Deslorelin datasheet for detailed information - separation of the sexes OR supplemental contraception is recommended during this time (see product data sheet. Megestrol acetate pills daily 7 days before and 8 days after implant insertion have been used to suppress stimulation phase. The dose for domestic dogs is 2mg/kg, but must be extrapolated for other taxa). | Latency to effectiveness can be up to 6 weeks so separation of the sexes is recommended if possible. | In general inhibition of ovulation after 1 day when inserted on day 1-5 of cycle or when replacing oral progestogen. As the right stage during oestrous cycle is often unknown, it is advised to use other contraceptive methods for at least 7-14 days after insertion of the implant depending on administration route (IM or SC). | 1-3 days post injection. However, if the cycle stage is not known then extra time must be allowed; therefore, separation of the sexes or alternative contraception should be used for at least 1 week. Oral progestagen such as megestrol acetate pills (Ovarid) or altrenogest (Regumate®) can be used for this purpose to supplement the contraceptive bout. | In mares, 95% treated with Regu-mate will be suppressed within 3 days however separation of the sexes should be used for 7-14 days after contraceptive methods, if this is not possible then other contraception methods should be used for this time. | Latency to effectiveness is approximately 2-3 weeks after the final injection in year 1 therefore separation of the sexes from the initial injection until 2 weeks after the final injection is recommended (primary course of vaccination 2 injections 2-4 weeks apart, preferable 3 injections). | - |
| Oestrus cycles during contraceptive treatment: | Initial oestrus and ovulation (during the 3 weeks of stimulation) then down-regulation. To prevent the stimulation phase, the megestrol acetate protocol described above is recommended. | Initial oestrus and ovulation (during the 3 weeks of stimulation) then down-regulation. To prevent the stimulation phase, the megestrol acetate protocol described above is recommended. | In a group of 57 mares, 50% were anoestrous after the primary vaccination and 100% after the booster vaccination, the interval from treatment to anoestrus was 2-3 weeks. | Oestrus behaviour may be observed. Cycling and even ovulation can occur in adequately contracepted individuals (but is unlikely and the degree of suppression is dose dependent). | Oestrus behaviour may be observed. Cycling and even ovulation can occur in adequately contracepted individuals (but is unlikely and the degree of suppression is dose dependent). | Oestrus is inhibited | PZP should not suppress oestrous cycles and may extend the breeding season beyond what is considered typical, resulting in additional oestrous cycles. | - |
| Use during pregnancy: | Not recommended as may cause abortion | Not recommended as may cause abortion | Unknown | Progestagens are not recommended in pregnant animals because of the possibility of prolonged gestation leading to dystocia, stillbirth and abortion in some species, although the effect may depend on dose. | Not recommended for use in pregnant animals because of the risk of prolonged gestation, stillbirth or abortion, etc. in some species, although the effect may depend on dose. | Not recommended for use in pregnant animals because of the risk of prolonged gestation, stillbirth or abortion. | Does not interrupt pregnancy or affect foetus | - |
| Use during lactation: | No contraindications once lactation established; however, treatment during pregnancy may impede proper mammary development. | No contraindications once lactation established; however, treatment during pregnancy may impede proper mammary development. | Unknown | Considered safe for nursing. Does not affect lactation, but etonogestrel is excreted in milk. | Considered safe for nursing infant. | Considered safe for nursing infant. | No known contraindications | - |
| Use in prepubertals or juveniles: | Data deficient in this group, see product information sheet. Deslorelin may prevent epiphyseal closure of the long bones, resulting in taller individuals. | Lupron® may prevent epiphyseal closure of the long bones, resulting in taller individuals. | Unknown | The use of synthetic progestagens in pre-pubertals or juveniles has not been fully assessed. Possible long-term effects on fertility are not known. | The use of synthetic progestagens in pre-pubertals or juveniles has not been fully assessed. Possible long-term effects on fertility are not known. | The use of synthetic progestagens in pre-pubertals or juveniles has not been fully assessed. Possible long-term effects on fertility are not known. | PZP-treated prepubertal white-tailed deer and feral horses were fertile as adults. Not associated with side effects in elephants. But there are no data for other species | - |
| Use in seasonal breeders: | Data deficient. Should start at least 2 months before start of breeding season. | Data deficient. Should start at least 2 months before start of breeding season. | Unknown but if used should be done at least 6 weeks prior to the breeding season. Effective in the horse. Use before cycling starts at the onset of the breeding season. | | Should be injected at least 1 week before the breeding season starts. | Treatment should begin at least one month before the anticipated onset of the breeding season. | Can be used in seasonal breeders but initial treatment and annual boosters should be carried out 2 and 1 months before the start of the breeding season respectively. | - |

[illegible]