PRESCRIPTION ANIMAL REMEDY

KEEP OUT OF REACH OF CHILDREN
FOR ANIMAL TREATMENT ONLY

CATTLE-MATE™

INJECTION

DESCRIPTION
CATTLE-MATE INJECTION is a clear, colourless, sterile solution containing 100 µg/mL of gonadorelin (as acetate)

INDICATION
For use in oestrus synchronisation programs in combination with PGF2α.
For the treatment of cystic ovaries, prevention of delayed ovulation and improvement of postpartum fertility in cattle.

PHARMACOLOGY
Pharmacodynamic properties
Gonadorelin is a synthetic decapeptide, identical to the endogenous Gonadotrophin /releasing Hormone (GnRH), which controls the production, and secretion of Lutenising Hormone (LH) and Follicle Stimulating Hormone (FSH) by the pituitary gland. Both LH and FSH have a direct effect on the ovary. FSH stimulates follicle development, while LH induces ovulations and luteinisation. Injection of gonadorelin acetate induces the simultaneous release of FSH and LH thereby stimulating the maturation of ovarian follicles, ovulation and development of corpus luteum.

GnRH is synthesised and secreted in a pulsatile manner by the hypothalamus and is transported via the hypothalamic-hypophyseal portal circulation to its site of action, the anterior pituitary.

Gonadorelin induces the synthesis and release of gonadotrophins from the anterior pituitary, such that LH and FSH are released from the pituitary shortly after gonadorelin administration. LH and FSH act on the ovary to stimulate maturation of ovarian follicles and ovulation.

Pharmacokinetic properties
Gonadorelin is rapidly absorbed from the site of the intramuscular injection. Following absorption, rapid distribution of gonadorelin occurs with concentrations at the site of action as well as in the pineal gland, posterior pituitary, ovaries, liver and kidney, greater than concentrations in plasma. The plasma half-life of gonadorelin is approximately 20 minutes in cattle. Gonadorelin undergoes rapid metabolism by peptidase enzymes into smaller inactive peptides and amino acids. Metabolites are primarily excreted in urine and expired air.

CLINICAL APPLICATION
Clinical applications for Cattle-Mate Gonadorelin Injection in cattle are as follows:

Oestrus synchronisation
Oestrus synchronisation protocols involving the use of Prostaglandin F2α (PGF2α) and Gonadotrophin Releasing Hormone (GnRH) have been subjected to extensive study in dairy herds around the world. Comparisons have been made between GnRH/PGF2α synchronisation programs and a variety of existing reproductive management programs of varying levels of intervention. GnRH/PGF2α protocols have measured favourably against standard prostaglandin programs in terms of reproductive parameters such as pregnancy rate and calving to contraception interval.

Unlike previously implemented synchronisation protocols utilising PGF2α only, application of the GnRH/PGF2α protocol described below results in synchronisation of ovulation to a degree of precision that allows fixed-time insemination.

A reproductive program using fixed-time insemination provides numerous benefits both in terms of reduced management input and economic advantages. Fixed-time insemination reduces management input through the insemination of large groups of cows together, and by elimination of the need for oestrus detection activities in the first round. The benefits are magnified in situations where the level of oestrus detection is low. Economic benefits of a fixed-time insemination program result from a reduction in calving to conception interval and a tighter calving pattern, parameters of particular significance under seasonal calving conditions.

GnRH/PGF2α protocols have the added advantage of demonstrated success for simultaneous treatment and synchronisation of cows suffering from cystic ovarian disease, and the ability to stimulate and synchronise the oestrus cycle of previously anovulatory cows.

The GnRH/PGF2α protocol that has received the most interest and study for its applicability to dairy cattle reproductive management may be summarised as follows:

Day 0:	GnRH administration
Day 7:	PGF2α administration
Day 9:	GnRH administration (48 hours after PGF2α)
Insemination:	8-24 hours after second GnRH.

Insemination is performed at a fixed time 8 to 24 hours after the second GnRH dose, regardless of presence or absence of visible oestrus.

The rationale behind the GPG protocol is as follows:

i. The initial GnRH dose induces either ovulation or luteinisation of the dominant follicle

present at the time of treatment, and the smaller follicles undergo atresia. A new follicular wave is subsequently recruited, and a new dominant follicle gradually emerges.

ii. 7 days after treatment with GnRH, administration of PGF2α causes luteolysis of the GnRH-induced corpus luteum. The new dominant follicle is ready to ovulate 2-3 days later.

iii. The second GnRH dose induces a LH surge which further synchronises the dominant follicle, resulting in ovulation of predictable timing, allowing fixed-time insemination 8-24 hours later.

GnRH/ PGF2α oestrus synchronisation protocols are intended for lactating dairy cattle. Variable results are reported in the literature for the application of GnRH/ PGF2α in heifers.

Treatment of cystic ovaries
Cystic ovaries are an important infertility problem in dairy cattle. Ovarian cysts may be single or multiple, and of follicular or luteal origin. Clinical signs of ovarian cysts include irregular oestrus cycles, anoestrus and nymphomania. Diagnosis of ovarian cysts is by rectal palpation of the structures on one or both ovaries.

Ovarian cysts respond to the LH release induced by treatment with Cattle-Mate Gonadorelin Injection, such that normal cyclical activity may resume.

Prevention of delayed ovulation
Delayed ovulation can result in reduced conception rates due to asynchrony between ova and sperm at the time of artificial insemination (AI). Administration of CATTLE-MATE INJECTION during the first 40 days of the postpartum period may initiate a resumption of cyclicity in acyclic cows, and reduce the incidence of postpartum ovarian disorders.

DIRECTIONS FOR USE
Dosage and administration
Following withdrawal of the first dose, use the remainder of the vial within 14 days or discard the unused portion.

Cattle: Injection to be given into the anterior half of the neck.
Cystic ovaries: 5 mL (500 µg gonadorelin) by intramuscular injection.
Prevention of delayed ovulation: 2.5 mL (250 µg gonadorelin) by intramuscular injection.
Improvement of postpartum fertility: 2.5 mL (250 µg gonadorelin) by intramuscular injection.
Oestrus synchronisation: 1 mL (100 µg gonadorelin) per dose by intramuscular injection, for example:
Day 0: 1 mL Cattle-Mate Injection
Day 7: 2 mL PGF2α
Day 9: 1 mL Cattle-Mate Injection
Insemination: 8-24 hours after second Cattle-Mate Injection

WITHHOLDING PERIOD: NIL

TRADE ADVICE
EXPORT SLAUGHTER INTERVAL (ESI): This product does not have an ESI established. For advice on the ESI, contact Vetoquinol Australia Pty Ltd on 1800 032 355.

NEW ZEALAND INFORMATION
RESTRICTED VETERINARY MEDICINE
It is an offence for users of this product to cause residues exceeding the relevant MRL.
Australia's trade advice and Export Slaughter Interval information do not apply in New Zealand.

Following the withdrawal of the first dose, use the remainder of the vial within 28 days or discard the unused portion.

Registered pursuant to the ACVM Act 1997, No. A11104.
See www.foodsafety.govt.nz for registration conditions

FIRST AID
If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26, New Zealand 0800 POISON (0800 764766).

STORAGE
Store between 2° and 8°C. (Refrigerate. Do not freeze). Protect from light. Store container upright.

DISPOSAL
Dispose of empty container by wrapping in paper and placing in garbage.

PACKAGING
20 mL and 100 mL glass vials.
Not all pack sizes may be marketed.

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