

For Veterinary Use Only.

BUSERIN[®]

Busereline Acetate

Solution for Injection

Hormone - GnRH analogue

COMPOSITION:

Buserin is a clear, colorless, sterile solution containing in each ml 0.0042 mg busereline acetate equivalent to 0.004 mg busereline and 10 mg benzyl alcohol as bactericide.

PHARMACOLOGIC PROPERTIES:

Active substance of **Buserin Solution for Injection** is busereline synthetic GnRH (Gonadotropin Releasing Hormone) analogue hormone. Hypothalamic gonadotropin-releasing hormone (GnRH) is a decapeptide that controls synthesis and secretion of gonadotropins (FSH-LH) on pituitary level and finally gonadot hormones. It helps development of follicles, occurrence of ovulation and luteinization according to physiological condition. Administered intravascularly or intramuscularly, busereline shows a similar effect with endogen GnRH by allowing the release of FSH (follicle-stimulating hormone) or LH (luteinizing hormone). It is taken rapidly by target cells in anterior pituitary when administered intravascularly. It causes activation of adeny cyclase by binding to receptor cells in here. This enzyme causes an increase in intracellular cyclic AMP amount and initiation of LH or FSH synthesis as a result of a series of chain reaction. Effect of busereline is 20 to 170 times higher than natural LH. Half life is 3-4 minutes on shelves. Hormonal activity lasts for hours despite short half-life. It undergoes enzymatic decomposition in pituitary gland, liver and kidneys. It is substantially excreted in urine.

AREA OF USE / INDICATIONS:

In cattle

- Treatment of fertility disorders originating from ovary, such as follicle cysts, anoestrus, delayed ovulation and follicle atresia,
- Increasing offspring retention in artificial insemination and oestrus synchronization studies when used with PGF2-alpha, and reduction of time between birth and conception,

In Mares

- Treatment of cystic disorders in ovary in mares with prolonged or constant oestrus,
- Anoestrus treatment in non-cyclic mares,
- Ovulation induction for limitation of ovulation time and insemination time into a certain time period.
- Increasing offspring retention rate in cases of prolonged oestrus and constant oestrus.

In Rabbits

- Increasing offspring retention rate in natural and artificial insemination and induction of ovulation.

USAGE AND DOSAGE:

It is administered preferably intramuscularly; it can also be given subcutaneously or intravascularly.

In Cattle:

1- Treatment of follicular cysts : 5 ml **Buserin** is injected intramuscularly. Corpus luteum occurs in ovary for 8 days. At the same time, the cyst is also luteinized or can undergo regression. If it is seen during rectal examination that corpus luteum did not occur in 10-14 days or a new cyst development is observed, treatment should be repeated.

First indications of rutting can be seen 20 days following **Buserin** therapy. This time, offspring retention rate is increased in insemination by administering 2.5 ml Buserin.

2- Real anoestrus (Acycilia): 5 ml **Buserin** is administered.

Two rectal examinations should be made with an interval of 11 days in order to understand whether the cow is in real anoestrus. Alternatively, milk samples can be collected with an interval of 11 days for progesterone assay in milk.

Rutting should be observed 8-22 days after the therapy. Rectal examination should be repeated if no rutting is observed during this period. Therapy should be repeated in case there are no palpable developments on the ovary. If corpus luteum is palpated, however, prostaglandin F2 alpha or an analogue of it should be administered and the animal should be induced for rutting after 2-3 days.

3- Delayed ovulation: 2.5 ml **Buserin** is administered. Delayed ovulation can be treated during artificial insemination or breeding period or until 6-8 hours before these periods. Ovulation occurs generally 24 hours following the therapy.

4-Anovulation: 2.5 ml **Buserin** is administered.

5-Increasing pregnancy rate by administration during insemination: 2.5 ml **Buserin** is administered. Ovulation after artificial insemination can be made to occur at the right time by administration during artificial insemination or until 8 hours before. Pregnancy rate can be increased through inhibition of luteolysis, therefore embryonic mortality through single injection 11 or 12 days after artificial insemination.

6-Oestrus synchronization in spring cattle :

If **Buserin Solution for Injection** is used as a part of 10-day oestrus synchronization and artificial insemination program, an increase during pregnancy rate can be achieved and the period between parturition and re-conception can be shortened.

In this method, GnRH is used in combination with PGF2-alpha analogue having a luteolytic activity.

Application

Day : 0 (For ex. Monday) 2.5 ml Buserin

Day : 7 (For ex. Monday) PGF2-alpha analogue in recommended luteolytic dose

Day : 9 (For ex. Wednesday) 2.5 ml Buserin

Day : 10 (For ex. Thursday) Artificial insemination and final **Buserin** injection (2.5 ml) after 20-24 hours

In Horses

- **Ovulation of mature follicles by stimulation in horses, therefore synchronization of ovulation closer to breeding:** Considering the clinical finding rectal examination results, 10 ml **Buserin** Solution for Injection should be administered on the first day that the follicle is in maximum size. The best time for administration of Buserin Solution For Injection is 6 hours prior to breeding. Best timing can be achieved by Buserin injection in the morning, breeding in the afternoon, or by injection in the afternoon and breeding in the evening. In case the mare is still in rutting, insemination can be repeated on the next morning. Injection should be repeated unless ovulation does not occur 24 hours following the administration.

- **Treatment of ovary cysts :** 10 ml **Buserin** is injected. If it is observed during rectal examination that corpus luteum did not occur 10-14 days after the administration or the mare is seen to be still in rutting, therapy should be repeated.

- **Induction of ovulation :** 10 ml **Buserin** is injected on day 2 or 3 of rutting in mares with short rutting periods, and on day 7 or 8 in those with long rutting periods. Ovulation occurs after 24 - 36 hours. In mares, induction of ovulation not only prevents elongation of rutting period, but also facilitates determination of the best time for insemination by limiting ovulation in a certain time period. It also helps to increase offspring retention rate.

In Rabbits

- **Induction of ovulation in insemination after parturition:** 0.2 ml **Buserin** is administered subcutaneously 24

hours after parturition. Insemination should be carried out immediately after injection.

- **Increasing pregnancy rate** : 0.2 ml is injected during insemination or breeding.

SPECIFIC CLINICAL PARTICULARS AND SPECIAL WARNINGS FOR TARGET SPECIES:

In case of presence of a functional corpus luteum, induction of ovulation is not possible. Graaf follicle should exist in ovary in order for ovulation to be stimulated. As estrogenic hormone activity is high in cows up to 10 days postpartum, GnRH treatment will not have the expected effect.

For synchronization application recommended with PGF2-alpha application, cows showing oestrus before the completion of the program upon prostaglandin therapy should be inseminated without waiting for the synchronization program being completed.

UNDESIRE/SIDE EFFECTS:

It may cause temporary reactions (swelling, pain) in injection area. It is also reported that it may cause bronchospasm.

DRUG INTERACTIONS:

Phenothiazines, dopamine antagonists, digoxine and sex hormones inhibit gonadotropin release.

SYMPTOMS OF OVERDOSE AND PRECAUTIONS:

In cows, no undesired effects are observed in administrations up to ten times of the treatment dose. No special applications is recommended for accidental overdoses.

WARNINGS FOR DRUG RESIDUES IN FOOD:

Withholding period (WHP): Zero (0) days for flesh and milk.

CONTRAINDICATIONS

Busereline should not be used in animals that are hypersensitive against acetate.

Use during pregnancy: Corpus luteum being formed in the late periods of pregnancy continues releasing progesterone for continuance of pregnancy and suppressing GnRH release. It is physiologically contraindicated to administer GnRH during this period.

GENERAL WARNINGS:

Consult your veterinary surgeon before using or in case an unexpected effect is observed. Keep out of reach of children and away from food products.

STORAGE CONDITIONS AND SHELL LIFE:

Store in its package in room temperature (15 - 25 °C) and protect from light. Opened bottles can be used within 14 days in room temperature. Shelf life is 2 years after production date.

COMMERCIAL PRESENTATION FORM:

Offered into market in cardboard boxes and transparent glass vials of 5, 10 and 20 ml.

PLACE AND CONDITIONS OF SALE:

Sold upon Veterinary Surgeon prescription in pharmacies and veterinary surgeries (VSP).

APPROVAL DATE OF PACKAGE INSERT: 13.10.2008

MINISTRY OF AGRICULTURE AND RURAL AFFAIRS MARKETING AUTHORIZATION DATE AND NO :
13.10.2008-20/062

NAME AND ADDRESS OF MARKETING AUTHORIZATION OWNER:

Alke Saęlık Ürünleri San. ve Tic. A.Ş

Dolayoba, Çınardere Mh. 3. Petek Sk.

No: 18, 34896 Pendik-ISTANBUL

NAME AND ADDRESS OF MANUFACTURER COMPANY:

Alke Saęlık Ürünleri San. ve Tic. A.Ş

Merkez Organize Sanayi Bölgesi 2. Kısım 10. Cadde No:7 Tokat