SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

PMSG Intervet 5000IU, Powder and Solvent for Solution for Injection.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each vial of freeze-dried powder contains:

Active substance:
Serum gonadotrophin 5000 iu (equivalent to 200iu/ml once diluted)

For full list of excipients, see section 6.1

3 PHARMACEUTICAL FORM

Powder and solvent for solution for injection.

Vial containing white sterile freeze-dried powder plug and a vial containing sterile aqueous solution for reconstitution.

4 CLINICAL PARTICULARS

4.1 Target species

Cattle, pigs, sheep and dogs

4.2 Indications for use, specifying the target species

PMSG is capable of supplementing and being substituted for both luteinising hormone and follicle stimulating gonadotrophin of the anterior pituitary gland in both the male and female, stimulating development of the ovarian follicle.

4.3 Contra-indications

Where the possibility of multiple ovulations, due to exaggerated response from prolonged blood concentrations, has not been excluded by clinical examination following administration of PMSG to uniparous species (unless to induce superovulation in cattle), it is inadvisable to permit service or insemination during the first heat produced.

4.4 Special warning for each target species

None

4.5 Special precautions for use

i. Special precautions for use in animals

No special treatment or antidote recommended.
Repeated administration can result in reduced efficacy due to the immune-mediated antagonism.

ii. Special precautions to be taken by the person administering the medicinal product to the animals

Care should be taken to avoid accidental self-injection.
Wash your hands after use.

4.6 Adverse reactions (frequency and seriousness)

In rare cases, as with all protein preparations, anaphylactoid incidents may occur shortly after injection. Adrenaline injection (1:1000) given intravenously or intramuscularly when clinical signs appear is the standard treatment. The administration of corticosteroids may also be indicated.

4.7 Use during pregnancy or lactation

Not applicable.

4.8 Interaction with other medicinal products and other forms of interaction

None known.

4.9 Amounts to be administered and administration route

Make up immediately before use.
Reconstitute by dissolving the powder plug in about 5 ml of the solvent provided and then syringe the resulting solution into the solvent vial to mix with the remaining solvent. Administer by subcutaneous or intramuscular injection using normal aseptic precautions.

Cow:
In conjunction with the use of progestagen treatment when used for oestrus control in non-cycling cattle:
400-700 iu
Superovulation:
1500-4000 iu - on day 9-13 of oestrous cycle
Sow:
Anoestrus post weaning (induction of oestrus is difficult until 40 days post partum):
1000 iu - s.c. or i.m. Fertile oestrus usually follows in 3 - 7 days
Ewe:
In conjunction with progestagen-releasing sponges when used out of the normal breeding season:
500 iu - s.c. or i.m. at time of sponge removal

Bitch:
Oestrus induction (subnormal oestrus with non-acceptance):
20 iu/kg - s.c. daily for 10 days, at day 10 injection of 500 iu hCG.

Superovulation in cattle
The product may be used for the superovulation of female donor cattle preparatory to embryo transfer. As an example, the following regime has been successfully applied:-
A single dose of the product (1500 - 4000 iu) is injected on day 9 - 13 of a normal oestrous cycle (NB the exact dose of the product required to achieve effective superovulation will depend upon a number of factors particularly the breed, age, reproductive history, general health and nutritional status of the donor female and will be subject to individual variation). Forty-eight hours after the injection, luteolysis is induced by the injection of a prostaglandin analogue. Commonly one and a half times the normal luteolytic dose is administered. Oestrus normally occurs approximately 48 hours after the prostaglandin injection. Insemination is carried out at 60 and 72 hours after prostaglandin injection.
Collection of fertilised embryos (flushing) is carried out 6-8 days after insemination, suitable embryos being transferred to female recipient cattle whose oestrous cycles have previously been synchronised with that of the donor female.
(Experience has shown that oestrous cycles in donor and recipient females should be synchronised within ± 24 hours if reasonable success is to be expected). A further prostaglandin treatment (commonly 1½ times the luteolytic dose) must be given at the time of collection.
Note:
1 Despite the application of a suitable treatment regime certain individual donor
cows may fail to respond.
2 Wide variations in response may be expected between individual animals. Repeated treatment of a single animal may also yield variable results.
3 The overall success of an embryo transfer exercise will inevitably be influenced by the availability of suitable equipment and the skill and experience of the operator.

Further information
PMSG has been used in cases of impaired spermatogenesis in male animals (horse & bull 1000-3000 iu, boar & ram 500-750 iu, dog 400-800 iu, i.m. twice weekly for 4-6 weeks), but its degree of efficacy in these cases may be low.
PMSG is a protein hormone which acts on the ovary to stimulate the production of follicles. The number of follicles produced can be influenced by the dose of PMSG administered and this must be taken into account when, for instance, calculating the dose for a particular flock of ewes in which oestrus synchronisation is desired. In general, the further out of season that breeding is attempted and the lower the normal prolificacy of the flock, the more PMSG that will be required.
An average dose of 500 iu / ewe is recommended as a useful starting point but doses ranging from 200 - 750 iu have been used on occasion. It is therefore recommended that accurate flock records are kept of breed, dose given, time of injection and lambs produced so that in future seasons the amount can, if necessary, be adjusted for optimum results**.**

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

No special treatment or antidote recommended.

4.11 Withdrawal periods

Milk (Cattle)	Zero days
Meat (Cattle, pigs, sheep)	Zero days
Superovulation in cattle	
Milk	48 hours after 2nd prostaglandin treatment
Meat	28 days

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: Sex hormones and modulators of the genital system

ATCvet code: QG03GA03

5.1 Pharmacodynamic properties

PMSG is a potent gonadotrophin, with dual FSH and LH activity. It is composed of two non-covalently associated alpha and beta subunits, and is heavily glycosylated on its CTP tail. This extensive glycosylation is of key importance for obtaining the extended half life in blood typical of PMSG. As PMSG binds to FSH and LH receptors, it stimulates follicular growth and follicular maturation during the days preceding oestrus and ovulation. Limited amounts of PMSG will result in induction and synchronization of ovulation in cattle and small ruminants, irrespective of their cyclicity prior to treatment. Administration of slightly higher amounts will modestly increase ovulation rate and litter size. Administration of high amounts of PMSG will result in superovulation, therefore resulting in the numerous blastocysts needed for

embryo transfer. PMSG also has the potential to induce puberty in swine.

5.2 Pharmacokinetic particulars

The pharmacokinetic profile observed following injection of PMSG is characterized by the very long half life generated by the high glycosylation (N and O glycosylations) of the PMSG molecule. It also explains why a single PMSG administration has the ability to support follicular growth throughout the full duration of the follicular phase (2 to 5 days long according to the species).
Absorption of PMSG is rapid: In all three species studied, following injection, PMSG is rapidly absorbed from the injection site and C max is reached by 8 (pig/sheep) or 16h (cattle) following injection. Bioavailability following i.m. injection (compared to i.v. administration) is high in all species (cattle: 72%, pig: 71.3%, sheep: 92.6%).
PMSG elimination is slow: The elimination half life has been shown to range between 34 and 150 hours according to the species.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Mannitol
Disodium phosphate anhydrous
Sodium dihydrogen phosphate dihydrate

Solvent
Disodium phosphate dihydrate
Sodium dihydrogen phosphate dihydrate
water for injection

6.2 Incompatibilities

None known.

6.3 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 3 years.
Shelf life after dilution or reconstitution according to directions: 24 hours

6.4 Special precautions for storage

Store in a refrigerator (+2°C to +8°C).
Protect from light.
Reconstituted product should be stored in a refrigerator (2-8^{o}C), and reconstituted product remaining 24 hours after preparation should be discarded.

6.5 Nature and composition of immediate packaging

Clear, glass Type I Vials containing 5000 iu Serum gonadotrophin with Type I Halogenated butyl rubber stoppers with aluminium crimp caps (used by The Netherlands site)
And
Clear, glass Type I Vials containing 5000 iu Serum gonadotrophin with Bromobutyl rubber stoppers with aluminium crimp caps (used by the Germany site).
Colourless glass vial containing 25 ml solvent for reconstitution.
Packaged in a carton containing 1 vial of powder and 1 vial of solvent.

6.6 Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER

Intervet International B.V.
Wim de Körverstraat 35
5831 AN Boxmeer
Netherlands

8. MARKETING AUTHORISATION NUMBER

Vm 06376/4096

9. DATE OF FIRST AUTHORISATION

03 August 1994

10. DATE OF REVISION OF TEXT

November 2024

Gavin Hall
Approved: 22 November 2024