YOU PROVIDE THE GENETICS, WE PROVIDE FOLLTROPIN®
EMBRYO TRANSFER WITHIN YOUR REACH

Folltropin® is a purified pituitary extract that has been used successfully in breeds of cattle globally for 25 years. Folltropin® is one of the safest products for use in superstimulation protocols due to its low LH content, and it is the most cited commercial FSH product in embryo transfer literature.
**Folltropin®** is used for the induction of superovulation in reproductively mature heifers and cows.

**Folltropin®** is one of the safest products for use in superstimulation protocols due to its low LH content, and it is the most cited commercial FSH product in embryo transfer literature.

**Folltropin®** is a highly purified extract obtained from carefully selected porcine pituitary glands, and has a consistently low LH:FSH ratio. It is lyophilized to maintain potency under normal storage conditions.

Each sterile 20 mL vial contains FSH equivalent to 400 mg (700 IU) of NIH-FSH-P1. When reconstituted according to label directions the final solution contains 20 mg/mL.

**Folltropin®** was developed specifically for the superstimulation of domestic animals used in embryo transfer, based on the limitations of other gonadotrophin preparations available in the market.

A great deal of effort has been expended over the years in improving superstimulation treatment protocols. Treatments have evolved from natural luteolysis to complete control of follicular development and ovulation. These advances have made superovulation treatment more “user friendly” and have helped in disseminating the application of embryo transfer technology throughout the world. A major advancement has been the purification of gonadotrophin products for the induction of superstimulation.

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**Vetoquinol** was founded in Lure, France, at the beginning of the 1930’s, from Joseph Frechin’s vision. Since then, Vetoquinol has always remained a family owned business acknowledged for its sustained growth throughout the decades. Vetoquinol now is recognized as a worldwide leader in the animal health market.
FOLLICULAR WAVE MANIPULATION

Day 0
FSH (Folltropin®) AM & PM

PGF₂α AM & PM

Day 1
Heat, Insemination 12h-24h

Day 2

Day 3

Day 4

Day 5

Day 6

Day 7

Day 8

Day 9

Day 10

Embryo flush/collection ~ 7 days after heat/estrous

SIMPLE PROTOCOL FOR SUCCESS

Superovulation scheme

Donor cow

Fertilization

Embryos

Recipient cows

Synchronisation of recipient cows

Superovulation

Recovery, Transfer, Cryopreserve
Individual donor cow variability is an important factor affecting superovulatory response.

Data indicate that:
- Detrimental effects of high doses are due to overdosing with LH, and
- Purified pituitary extracts with LH removed had a much broader optimal dose range and increasing doses had no detrimental effect on ova/embryo quality.

<table>
<thead>
<tr>
<th>Group</th>
<th>Ova/Embryos</th>
<th></th>
<th></th>
<th>(%)</th>
<th>Transferable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>CL</td>
<td>Total</td>
<td>Fertilized</td>
<td></td>
</tr>
<tr>
<td>I (100% LH)</td>
<td>21</td>
<td>10.2</td>
<td>7.3</td>
<td>5.3</td>
<td>(73)</td>
</tr>
<tr>
<td>II (32% LH)</td>
<td>20</td>
<td>11.1</td>
<td>6.4</td>
<td>4.6</td>
<td>(72)</td>
</tr>
<tr>
<td>III (16% LH) - Folltropin®</td>
<td>20</td>
<td>15.6</td>
<td>13.6</td>
<td>9.7</td>
<td>(71)</td>
</tr>
<tr>
<td>IV (Pure FSH)</td>
<td>20</td>
<td>17.2</td>
<td>13.2</td>
<td>8.3</td>
<td>(63)</td>
</tr>
</tbody>
</table>

Means with different superscripts are different (ab – P < 0.05; cd – P < 0.07). Mapleton et al. Reprod. Nutr. Dev. 42 (2002) 1–11
Folltropin® is supported by a wide body of scientific literature spanning over 25 years with extensive publications from around the world.

1. Superovulatory response of Sistani cattle to three different doses of FSH during winter and summer. (2006)
3. Alternative approaches to setting up donor cows for superstimulation. (2008)
8. The effect of strain of Holstein-Friesian cow on size of ovarian structures, periovulatory circulating steroid concentrations, and embryo quality following superovulation. (2008)
9. Detection of bovine viral diarrhea virus (BVDV) in single or small groups of preimplantation bovine embryos. (2007)

FOLLTROPIN® MOST CITED FSH PRODUCT GLOBALLY

13. Detection of bovine viral diarrhea virus (BVDV) in single or small groups of preimplantation bovine embryos. (2008)
15. Improved superovulatory response in beef cattle following ovarian follicular ablation using a simple transvaginal device. (2007)

31. Superovulation of Holstein heifers under heat stress with FSH-P or Folltropin® in the cow. (1999)
32. Dose titration of Folltropin® in the cow. (1990)
33. Superovulation with three different commercial pituitary extracts in the cow. (1990)
34. The effect of dose schedule and route of administration on superovulatory response to Folltropin® in the cow. (1991)
37. A retrospective study to confirm the reproductive and embryological safety of Folltropin®-V use in dairy cattle. (2003)
38. Plasma follicle-stimulating hormone (FSH) levels and superovulatory response in the cow after a single injection of Folltropin®-V dissolved in a polyvinylpyrrolidone solution. (1992)
40. The effect of dose schedule and route of administration on superovulatory response to Folltropin® in Holstein cows. (1994)
41. Effect of exogenous progesterone on the superovulatory response in heifers inseminated with fresh or frozen semen. (1994)
42. A comparison of duration of Folltropin®-V administration in the cow to optimize the superovulatory response. (1992)
43. Efficacy study in cattle to determine the superovulatory response to a porcine follicular follicle-stimulating hormone extract. (Folltropin®-V) under field conditions; United Kingdom. (1999)
44. Factors influencing the variability in superovulation results in German Holstein cattle. (1997)
47. Superovulation (SP0) with Folltropin® in beef heifers. Trial IV. (1997)
50. A note on fertilization and embryo production in superovulated cattle with various levels of subcutaneous fat tissue. (1990)
51. Superovulation in the cow with a single subcutaneous injection of Folltropin®. (1991)
52. Effect of superstimulatory treatments on the expression of genes related to ovulatory capacity, oocyte competence and embryo development in cattle. (2013)
53. Effect of synchronization of follicle-wave emergence with estradiol and progesterone and super-stimulation with follicle-stimulating hormone on milk estrogen concentrations in dairy cattle. (2013)
54. Effect of duration of the growing phase of follicular waves on oocyte competence in superstimulated cattle. (2013)
56. Endometrial response of beef heifers on day 7 following insemination on supraphysiological concentrations of progesterone associated with superovulation. (2012)
57. Lengthening the superstimulatory treatment protocol increases ovarian response and number of transferable embryos in beef cows. (2012)
58. Effects of diet type on establishment of pregnancy and embryo development in beef heifers. (2012)
59. Ovarial follicle dysfunction in lactating dairy cows after treatment with Folltropin®-V at the onset of luteolysis. (2013)
60. Follicular characteristics and luteal development after follicle-stimulating hormone induced multiple ovulations in heifers. (2013)
63. FSH withdrawal improves development competence of oocytes in the bovine model. (2012)
64. Effect of follicular aspiration just before ovulation on corpus luteum characteristics, circulating progesterone concentrations and uterine receptivity in single-ovulating and superstimulated heifers. (2012)
65. Superovulation of beef cattle with a split-single intramuscular administration of Folltropin®-V in two concentrations of hyaluronan. (2012)
66. The Holstein cow in embryo transfer today as compared to 20 years ago. (2006)
FOLLTROPIN®
25 YEARS OF REPRODUCIBLE RESULTS

ACTIVE CONSTITUENT: Follicle stimulating hormone. 400mg* (equivalent to 20mg*/mL when reconstituted according to directions).

DESCRIPTION: Folltropin®-V is a highly purified follitropin extract obtained from carefully selected porcine pituitary glands. It is lyophilized to maintain potency under normal storage conditions. Folltropin®-V Diluent is a 20mL vial of Bacteriostatic Sodium Chloride Injection USP.

STATEMENT OF CLAIM: For use in breeding-age heifers or cows to induce superovulation. Prior to the collection of superovulated and fertilized ova from these animals, estrus will have to be induced with prostaglandin F2α or a prostaglandin F2α analogue.

DIRECTIONS FOR USE: Not for administration to pigs. For intramuscular use. Reconstitute Folltropin®-V with Folltropin®-V Diluent.

DOSAGE AND ADMINISTRATION: Store reconstituted Folltropin®-V at between 2°C and 8°C (Refrigerate. Do not freeze). Use the contents within 5 days of reconstitution. Discard the unused portion. Start injecting animals on day 8-10 after observed or induced heat. Regimen: 2.5mL (50mg*) intramuscularly, twice daily, for 4 days. Administer prostaglandin F2α or a prostaglandin F2α analogue in order to induce heat for breeding. Dispose of empty container by wrapping with paper and putting in garbage.

WITHHOLDING PERIOD: 0 Days

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.

FIRST AID: If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126.


POTENCY & PURITY: It has been demonstrated that the ratio of follicle stimulating hormone (FSH) to luteinizing hormone (LH) present in pituitary extracts affects the ability of the ovary to respond to exogenous gonadotrophin treatment.[1, 2, 3] Mean ovulation rates have been shown to decrease when the LH:FSH ratio increases.[1, 2]

Previous FSH preparations have been shown to contain large amounts of LH, and to vary greatly in the LH:FSH ratio.[1, 2, 3, 4, 5] The purification and quality control procedures used in preparing Folltropin®-V ensure consistently low LH:FSH ratios.[3, 5, 6]

PACKAGING: 400mg* NIH-FSH-P1 with 20mL vial of diluent.

*National Institutes of Health (U.S.A.) reference standard NIHFSH-P1.

REFERENCES

APVMA Approval No. 38750/54224

Folltropin® the global leader in superovulation

Folltropin® has been used successfully in breeds of cattle globally for 25 years

Folltropin® has helped in spreading the application of embryo transfer technology