References on the Administration of Follicle Stimulating Hormone Using ALZET® Osmotic Pumps

Q6885: H. Kaneko*, et al.* Developmental ability of oocytes retrieved from Meishan neonatal ovarian tissue grafted into nude mice. Anim Sci J 2019;
ALZET Comments: Follicle stimulating hormone, porcine; Saline; Mice (nude); 2004; 13 days; Dose (porcine FSH (62.5 or 125 U/ml); animal info (Female nude mice (Crlj:CD1-Foxn1nu));.

Q5653: H. Kaneko*, et al.* Growth and fertilization of porcine fetal oocytes grafted under the renal capsules of nude mice. Theriogenology 2016;86(7):1740-8
ALZET Comments: Follicle stimulating hormone, porcine; mice; 2004; 13 days; Controls were non-grafted; replacement therapy (Estradiol); Therapeutic indication (Follicular development, oocyte maturation, fertilization);
Dose (62.5 U/mL);.

Q2679: J. Lopez-Saucedo*, et al.* Superovulation, in vivo embryo recovery and cryopreservation for Aoudad (Ammotragus lervia) females using osmotic pumps and vitrification: a preliminary experience and its implications for conservation. TROPICAL CONSERVATION SCIENCE 2013;6(1):149-157
ALZET Comments: Follicle stimulating hormone, porcine; SC; Sheep; 1003D; Animal info (aoudad, aka Barbary, female); multiple pumps used (2); "the traditional procedures for superovulation in domestic ruminants are complicated and difficult to perform in wild females because the procedure requires many physical contact and repetitive procedures, i.e., the administration of FSH two times per day. Thus, we choose to deliver FSH using osmotic pumps to minimize such manipulations... and we considered that it was the best approach for wild ruminant females and most likely represents a more "physiological" delivery method, with the continuous administration of FSH rather than blood level spikes." pg 152-153.

Q5652: H. Kaneko*, et al.* Improved developmental ability of porcine oocytes grown in nude mice after fusion with cytoplasmic fragments prepared by centrifugation: a model for utilization of primordial oocytes. Theriogenology 2013;80(8):887-92
ALZET Comments: Follicle stimulating hormone, porcine; Mice; 2004; 2 weeks; animal info (5-6 weeks); Therapeutic indication (xenografting); Dose (62.5 U/mL);.

Q0281: W. Zhou*, et al.* Changes in Gene Expression in Somatic Cells of Rat Testes Resulting from Hormonal Modulation and Radiation-Induced Germ Cell Depletion. Biology of Reproduction 2010;82(1):54-65
ALZET Comments: Follicle stimulating hormone, human, recomb.; SC; Rat; 2001; 2 weeks; Animal info (LBNF1, male); pumps replaced after 1 week.

Q5567: J. Cozzi*, et al.* Procedures for somatic cell nuclear transfer in the rat. Methods Mol Biol 2010;597(137-50
ALZET Comments: Follicle stimulating hormone; Saline; SC; Rat; 1003D; animal info (60–70 g immature female rats); post op. care (Buprenorphine analgesic); “We achieved the best results using immature females and continuous diffusion of FSH by Alzet osmotic minipumps implanted sub-cutaneously.” Pg. 142;.

Q0454: C. Agca*, et al.* Development of a Novel Transgenic Rat Overexpressing the P2Y(2) Nucleotide Receptor Using a Lentiviral Vector. JOURNAL OF VASCULAR RESEARCH 2009;46(5):447-458
ALZET Comments: Follicle stimulating hormone; SC; Rat; Animal info (Sprague-Dawley, female, 28-30 days old).

P9677: V. Ritter*, et al.* Follicle-stimulating hormone does not impact male bone mass in vivo or human male osteoclasts in vitro. Calcified Tissue International 2008;82(5):383-391
ALZET Comments: Follicle stimulating hormone; Saline; SC; Mice; 2004; 30 days; Controls received mp w/ vehicle; post op. care (buprenorphine); animal info (male, C57BL/6J, 16 wks old).

P7504: G. Shetty*, et al.* Both testosterone and follicle-stimulating hormone independently inhibit spermatogonial differentiation in irradiated rats. Endocrinology 2006;147(1):472-482

ALZET Comments: Follicle stimulating hormone, recomb. human; PBS; SC; Rat; 2001; 2 weeks; Controls received sham implant; pumps replaced every week; animal info (male LBNF1, 9-12 wk old); testes irradiated.

P8120: W. E. Filipiak*, et al.* Advances in transgenic rat production. TRANSGENIC RESEARCH 2006;15(6):673-686
ALZET Comments: Follicle stimulating hormone, porcine; SC; Rat; 1003D; Comparison of SC injections vs. mp; peptides; animal info (female, Sprague-Dawley CD, 4-6 wk old).

P7567: E. Popova*, et al.* Strain differences in superovulatory response, embryo development and efficiency of transgenic rat production. TRANSGENIC RESEARCH 2005;14(5):729-738
ALZET Comments: Follicle stimulating hormone; SC; Rat; 2001; Comparison of PMSG by IP injections vs. mp; peptides; animal info (female Lewis, Wistar-Kyoto, SHRSP, Sprague-Dawley, 28-35 days old).

P5321: E. Popova*, et al.* Comparison between PMSG- and FSH-induced superovulation for the generation of transgenic rats. MOLECULAR REPRODUCTION AND DEVELOPMENT 2002;63(2):177-182
ALZET Comments: Follicle stimulating hormone; SC; Rat; 2001;

P5251: L. J. Mullins*, et al.* Transgenesis in the rat. Methods Mol. Biol 2002;180(255-270
ALZET Comments: Follicle stimulating hormone; Saline; SC; Rat; 1003D; 3 days; Detailed procedures for priming and surgery.

P5095: P. S. Duggal*, et al.* Effects of leptin administration and feed restriction on thecal leucocytes in the preovulatory rat ovary and the effects of leptin on meiotic maturation, granulosa cell proliferation, steroid hormone and PGE(2) release in cultured rat ovarian follicles. REPRODUCTION 2002;123(891-898
ALZET Comments: Follicle stimulating hormone; Saline; SC; Rat; 3 days; human FSH used; endocrinology.

P5284: T. J. Corbin*, et al.* Strain variation of immature female rats in response to various superovulatory hormone preparations and routes of administration. Contemp. Top. Lab Anim Sci 2002;41(2):18-23
ALZET Comments: Follicle stimulating hormone; SC; Rat; 54-60 hours; Comparison of ip injections vs. mp; endocrinology.

Q6839: C. J. P. Jones*, et al.* Ultrastructure of epithelial plaque formation and stromal cell transformation by post-ovulatory chorionic gonadotropin treatment in the baboon (papio anubis). Human Reproduction 2001;16(12):2680-2690
ALZET Comments: Chorionic gonadotropin hormone, human; follicle stimulating hormone; Monkey (baboon); 5 days; animal info (normally cycling adult female baboon);.

P4725: P. S. Duggal*, et al.* The *in vivo* and *in vitro* effects of exogenous leptin on ovulation in the rat. Endocrinology 2000;141(6):1971-1976
ALZET Comments: Follicle stimulating hormone, human;; Saline;; SC;; Rat;; 3 days;; Controls received mp w/ vehicle; functionality of mp verified by plasma progesterone and estradiol levels (result of FSH administration); peptides;.

P3531: A. F. Treloar*, et al.* Superovulation of New Zealand white rabbits by continuous infusion of follicle-stimulating hormone, using a micro-osmotic pump. Lab. Anim. Sci 1997;47(3):313-316
ALZET Comments: Follicle stimulating hormone; SC; rabbit; 1003D; 3 days; functionality of mp verified by serum levels; peptides.

P3670: K.-P. Brussow*, et al.* Aspects of follicular development and intrafollicular oocyte maturation in gilts. Reprod. Dom. Anim 1996;31(555-563
ALZET Comments: Follicle stimulating hormone, porcine; pig; 2ML1; 7 days; controls received mp w/ saline.

P3259: T. Matikainen*, et al.* Effects of recombinant human FSH in immature hypophysectomized male rats: evidence for leydig cell-mediated action on spermatogenesis. J. Endocrinol 1994;141(449-457
ALZET Comments: Follicle stimulating hormone, recomb. human; PBS; Rat; 7 days; controls received mp w/saline; replacement therapy (hypophysectomy); peptides.

P3133: J. S. Tapanainen*, et al.* Induction of ovarian follicle luteinization by recombinant follicle-stimulating hormone. Endocrinology 1993;133(6):2875-2880
ALZET Comments: Follicle stimulating hormone, recomb.; Rat; 48 hours; replacement therapy (hypophysectomy); peptides.

P2321: M. Ishimatsu*, et al.* Continuous luteinizing hormone infusion prevents atretic changes of the follicles during superovulation in hamsters. Endocrine J 1993;40(665-671
ALZET Comments: Follicle stimulating hormone, human; Luteinizing hormone; PBS; Albumin, bovine serum; SC; hamster; 2001; 4 days; controls received mp w/ vehicles only; agents infused alone and in combination; human LH used.

P2359: A. Meseguer*, et al.* Effects of pituitary hormones on the cell-specific expression of the KAP gene. Mol. and Cellular Endocrin 1992;89(153-162
ALZET Comments: Luteinizing hormone; ACTH, human; Thyroid-stimulating hormone, rat; Follicle stimulating hormone, rat; Growth hormone, rat; Prolactin, ovine; SC; mice; 2001; 7 days; controls received mp w/ vehicles; replacement therapy (hypophysectomy); peptides.

P3254: P. S. LaPolt*, et al.* Gonadotropin-induced up- and down-regulation of ovarian follicle-stimulating hormone (FSH) receptor gene expression in immature rats: effects of pregnant mare's serum gonadotropin, human chorionic gonadotropin, and recombinant FSH. Endocrinology 1992;130(3):1289-1295
ALZET Comments: Follicle stimulating hormone; SC; Rat; no duration posted; replacement therapy (hypophysectomy); peptides.

P1763: A. Wubishet*, et al.* Preovulatory LH profiles of superovulated cows and progesterone concentrations at embryo recovery. Theriogenology 1991;35(2):451-457
ALZET Comments: Follicle stimulating hormone; SC; cattle; 7 days; no comment posted.

P2046: K. K. Vihko*, et al.* Stimulatory effects of recombinant follicle-stimulating hormone on leydig cell function and spermatogenesis in immature hypophysectomized rats. Endocrinology 1991;129(4):1926-1932
ALZET Comments: Follicle stimulating hormone; PBS; SC; Rat; 7 days; replacement therapy (hypophysectomy).

P1951: G. S. Hamilton*, et al.* The superovulation of synchronous adult rats using follicle-stimulating hormone delivered by continuous infusion. Biol. Reprod 1991;44(851-856
ALZET Comments: Follicle stimulating hormone; Gonadotrophin, human chorionic; SC; Rat; 2001; 3, 4, 7 days; peptides.

P1859: J. A. Carnegie. Immunolocalization of fibronectin and laminin within rat blastocysts cultured under serum-free conditions. J. Reprod. Fertil 1991;91(423-434
ALZET Comments: Follicle stimulating hormone; Gonadotrophin, human chorionic; Saline; SC; Rat; 2001; 1 day; pumps removed and reimplanted into different animals.

P1698: D. S. Keeney*, et al.* Reversal of long-term LH deprivation on testosterone secretion and Leydig cell volume, number and proliferation in adult rats. J. Endocrinol 1990;127(47-58
ALZET Comments: Luteinizing HRH; Follicle stimulating hormone, ovine; SC; Rat; 2002; 2 weeks; peptides; ovine LHRH used.

P1755: K. M. Henderson*, et al.* Oocyte production and ovarian steroid concentrations of immature rats in response to some commercial gonadotrophin preparations. Reprod. Fertil. Dev 1990;2(671-682
ALZET Comments: Luteinizing hormone; Follicle stimulating hormone; SC; Rat; 2001; 72 hours; FSH-P, Folltropin, Oragen, Folligon; horse and porcine LH used.

P1805: A. B. Galway*, et al.* Recombinant follicle-stimulating hormone induces ovulation and tissue plasminogen activator expression in hypophysectomized rats. Endocrinology 1990;127(6):3023-3028
ALZET Comments: Follicle stimulating hormone; SC; Rat; 76 hours; no comment posted.

P1519: C. Rivier*, et al.* Immunoneutralization of endogenous inhibin modifies hormone secretion and ovulation rate in the rat. Endocrinology 1989;125(1):152-157
ALZET Comments: Follicle stimulating hormone, ovine; Albumin, bovine serum; PBS; IP; Rat; 2001; no duration posted; dose-response; functionaltiy of mp verified by plasma levels.

P3801: M.-C. Leveille*, et al.* Preimplantation embryo development and serum steroid levels in immature rats induced to ovulate or superovulate with pregnant mares' serum gonadotropin injection of follicle-stimulating hormone infusions. Gamete Res 1989;23(127-138
ALZET Comments: Follicle stimulating hormone, porcine; Gonadotrophin, human chorionic; Saline, sterile; SC; Rat; 2001; 72 hours; comparison of sc PMSG injections vs. mp; peptides.

P1238: J. J. Milette*, et al.* The importance of follicle-stimulating hormone in the initiation of testicular growth in photostimulated djungarian hamsters. Endocrinology 1988;122(1060-1066
ALZET Comments: Follicle stimulating hormone, ovine; Luteinizing hormone; Saline; IP; hamster; 2001; 8 days; controls left untreated; dose-response (graph); peptides; ovine LH used.

P1815: D. T. Armstrong*, et al.* Superovulation of immature rats by continuous infusion of follicle-stimulating hormone. Biol. Reprod 1988;39(511-518
ALZET Comments: Follicle stimulating hormone; Rat; 2001; 60 hours; comparison of bid sc injections vs. mp; 'short half-life of FSH-A requires...continuous infusion...results establish the efficacy of FSH in causing superovulation when infused continuously.' (p.517).

P0858: A. Wubishet*, et al.* Continuous subcutaneous infusion of follicle stimulating hormone as a method of superovulating dairy cows. Theriogenology 1986;25(6):809-812
ALZET Comments: Follicle stimulating hormone; Saline; SC; cattle; 2ML1; 7 days; comparison of im injections vs. mp infusion; peptides.

P0520: F. Garza*, et al.* Luteinizing hormone increases the number of ova shed in the cyclic hamster and guinea-pig. J. Endocrinol 1984;101(289-298
ALZET Comments: Gonadotrophin, pregnant mare serum; Luteinizing hormone; Follicle stimulating hormone, ovine; Gonadotrophin, human chorionic; Albumin, bovine serum; PBS; SC; Guinea pig; hamster; mice; Rat; 2001; 2-5 days; comparison of agents effects; replacement therapy (hypophysectomy); agents admin. singly; peptides; bovine, ovine, & human LH used.

P0322: L. L. Ewing*, et al.* Effect of luteinizing hormone on Leydig cell structure and testosterone secretion. Endocrinology 1983;112(5):1763-1769
ALZET Comments: Follicle stimulating hormone; Growth hormone, ovine; Luteinizing hormone; Prolactin, ovine; Thyroid-stimulating hormone; Borate; Peanut oil; SC; Rat; 5 days; replacement therapy (hypophysectomy); simultaneous infusion of testosterone & estradiol implants w/ mp infusion of polypeptides; pulsed delivery of agents (intermittent w/ vehicle); peptides; ovine LH used.

R0046: P. Skett*, et al.* The effect of pituitary hormones on hepatic drug metabolism. In 'Biochemistry, Biophysics and Regulation of Cytochrome P-450,' J. -A. Gustafsson, J. Carlstedt-Duke, A. Mode, and J. Rafter (eds.), Elsevier/North-Holland, Amsterdam 1980;195-198
ALZET Comments: Enkephalin analog DADLE; Follicle stimulating hormone; Growth hormone, bovine; Growth hormone, rat; Pituitary extract; Prolactin, bovine; Prolactin, rat; Thyroid-stimulating hormone; Water; SC; Rat; 1701; 1 week; peptides.