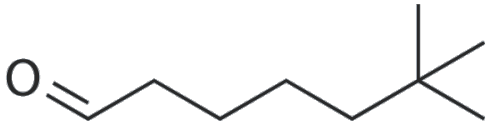
Product Data Sheet

Product Name: Menotropin
Cat. No.: GC25627

Chemical Properties

Cas. No.	61489-71-2		
Formula	C9H18O	M.Wt	142.24
Solubility		Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			



Protocol

Cell experiment [1]:

Cell lines SKOV-3 human ovarian carcinoma cells

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Preparation Method	SKOV-3 cells were propagated to confluence in T-75 flasks at 37°C under 5% CO_2 in RPMI-1640 medium supplemented with 10% charcoal-stripped/heat-inactivated fetal calf serum, 10μg/ml insulin, and 1% antibiotic/antimycotic solution. Cells were transferred into 24-well flat-bottom plates and subcultured overnight. Media were removed from monolayers and replaced with 1ml serum/phenol red-free media containing Menotropin treatments.
Reaction Conditions	0.1-100mIU/ml; 6 hours
Applications	Menotropin did not affect urokinase plasminogen activator secretion by SKOV-3 ovarian carcinoma cells during the 6-hour incubation period.

Animal experiment [2]:

Animal models	Sprague Dawley albino immature female rats
Preparation Method	Fifteen international units of the Menotropin was injected intraperitoneally on the morning of 28 days of age, and ovulation (presence of tubal ova) was examined on the morning of 29, 30 and 31 days of age.
Dosage form	15IU; intraperitoneal injection; single injection on day 28 of age
Applications	Menotropin alone induced ovulation in 70% of rats at 29 days of age, in 35% of rats at 30 days of age, and no ovulation was observed at 31 days of age.

Caution: Product has not been fully validated for medical applications. For research use only.
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References:
[1] McDonnel AC, Murdoch WJ. High-dose progesterone inhibition of urokinase secretion and invasive activity by SKOV-3 ovarian carcinoma cells: evidence for a receptor-independent nongenomic effect on the plasma membrane. J Steroid Biochem Mol Biol. 2001 Aug;78(2):185-91.
[2] Koyama T, Hagino N, Cothron AW, et al. Effect of toki-shakuyaku-san on ovulation induced by human menopausal gonadotropin in rats. Am J Chin Med. 1988;16(3-4):169-72.

Background

Menotropin is a gonadotropin drug extracted from the urine of postmenopausal women, containing follicle-stimulating hormone (FSH) and luteinizing hormone (LH). Menotropin can stimulate ovarian follicular development and maturation by binding to FSH receptors, while activating LH receptors to promote estrogen secretion and trigger ovulation. Menotropin can be used in research related to female anovulatory infertility and male hypogonadotropic hypogonadism[1-4].

In vitro, Menotropin (0.1-100mIU/ml) was used to treat SKOV-3 human ovarian carcinoma cells for 6 hours. Menotropin did not significantly affect urokinase plasminogen activator secretion[5]. Menotropin (10mIU/ml) was used to treat human granulosa cells for 48 hours. Menotropin significantly increased progesterone concentrations in the medium and cytoplasm, and enhanced microsomal 3β-hydroxysteroid dehydrogenase activity[6].

In vivo, Menotropin (15IU; single injection) was administered intraperitoneally to immature female Sprague Dawley albino rats at 28 days of age. Menotropin induced ovulation in rats over two consecutive days[7]. Menotropin (5IU/day) was administered intraperitoneally to 6-week-old BALB/C mice for 5 days. Menotropin significantly increased serum follicle-stimulating hormone and luteinizing hormone levels in mice, enlarged follicular volume, thickened granulosa cells, and promoted corpus luteum formation[8].

References:
[1] Li J, Peng Y, Dai X, et al. Human menopausal gonadotropin (HMG) combined different doses of letrozole for treating anovulatory infertility in patients with polycystic ovary syndrome: a randomized controlled trial. J Assist Reprod Genet. 2025 Jun;42(6):1895-1906.
[2] Daya S. WITHDRAWN: Follicle-stimulating hormone and human menopausal gonadotropin for

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ovarian stimulation in assisted reproduction cycles. Cochrane Database Syst Rev. 1996 Apr 22; (1):CD000061.
[3] Levi Setti PE, Alviggi C, Colombo GL, et al. Human recombinant follicle stimulating hormone (rFSH) compared to urinary human menopausal gonadotropin (HMG) for ovarian stimulation in assisted reproduction: a literature review and cost evaluation. J Endocrinol Invest. 2015 May;38(5):497-503.
[4] Baer G, Loumaye E. Comparison of recombinant human luteinising hormone (r-hLH) and human menopausal gonadotropin (hMG) in assisted reproductive technology. Curr Med Res Opin. 2003;19(2):83-8.
[5] McDonnel AC, Murdoch WJ. High-dose progesterone inhibition of urokinase secretion and invasive activity by SKOV-3 ovarian carcinoma cells: evidence for a receptor-independent nongenomic effect on the plasma membrane. J Steroid Biochem Mol Biol. 2001 Aug;78(2):185-91.
[6] Riccetti L, Klett D, Ayoub MA, et al. Heterogeneous hCG and hMG commercial preparations result in different intracellular signalling but induce a similar long-term progesterone response in vitro. Mol Hum Reprod. 2017 Oct 1;23(10):685-697.
[7] Koyama T, Hagino N, Cothron AW, et al. Effect of toki-shakuyaku-san on ovulation induced by human menopausal gonadotropin in rats. Am J Chin Med. 1988;16(3-4):169-72.
[8] Wen X, Xie J, Zhou L, et al. The role of combining medroxyprogesterone 17-acetate with human menopausal gonadotropin in mouse ovarian follicular development. Sci Rep. 2018 Mar 13;8(1):4439.

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