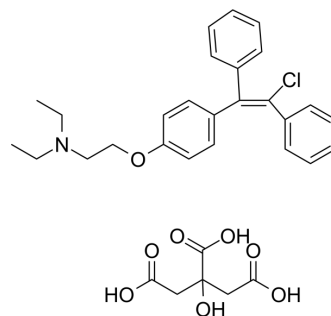


Clomiphene citrate

Cat. No.:	HY-B0463
CAS No.:	50-41-9
Molecular Formula:	C ₃₂ H ₃₆ ClNO ₈
Molecular Weight:	598.08
Target:	Estrogen Receptor/ERR
Pathway:	Vitamin D Related/Nuclear Receptor
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (83.60 mM)
 H₂O : 1 mg/mL (1.67 mM; Need ultrasonic)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
		1 mM	1.6720 mL	8.3601 mL	16.7202 mL
5 mM	0.3344 mL	1.6720 mL	3.3440 mL		
10 mM	0.1672 mL	0.8360 mL	1.6720 mL		

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: PBS
Solubility: 7.14 mg/mL (11.94 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (4.18 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (4.18 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (4.18 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Clomiphene citrate (Clomifene citrate) is an orally active estrogen-receptor modulator. Clomiphene citrate has anti-cancer activity, induces perturbations during meiotic maturation and cytogenetic abnormalities and ameliorates in managing psychiatric and cognitive impairment^{[1][2][3]}.

In Vitro

Clomiphene citrate (50 μM, 1-30 min) inhibits the viability of PC3 human prostate cancer cells^[1].

Clomiphene citrate (1-5 µg/mL, 18 h) induces chromosome abnormalities in mouse oocytes^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Viability Assay^[1]

Cell Line:	PC3 human prostate cancer cells
Concentration:	50 µM
Incubation Time:	1 min, 2 min, 5 min, 10 min, 15 min, 20 min, 30 min
Result:	Reduced cell viability by 10-50% for 2-15 min in a time-dependent manner.

In Vivo

Clomiphene citrate (25-100 mg/kg, Intraperitoneal injection, single dose) induces chromosome abnormalities in mouse metaphase II oocytes^[2].
Clomiphene citrate (1 mg/kg, Oral, once a day for 15 days) with carvedilol (HY-B0006) has anxiolytic potential and improved cognitive functions in letrozole(HY-14248)-induced polycystic ovary syndrome (PCOS) rats^[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female ICR mice ^[2]
Dosage:	25 mg/kg, 50mg/kg, 100mg/kg
Administration:	Intraperitoneal injection (i.p.)
Result:	Resulted in a decrease in the number of ovulated oocytes and a significant increase in hyperploidy at 100 mg/kg.

Animal Model:	letrozole(HY-14248)-induced PCOS rats ^[3]
Dosage:	1 mg/kg
Administration:	Oral
Result:	Demonstrated a statistically raised NRF-2 gene expression. Up-regulated expression of NF-κB. Showed a reversal of the memory defect. Down-regulated of acetylcholine esterase expression.

CUSTOMER VALIDATION

- J Pharmaceut Biomed. 2020, 113870.
- Biochem Biophys Res Commun. 2020 Feb 19;522(4):862-868.
- Patent. US11696914.
- bioRxiv. 2020 May.

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REFERENCES

[1]. Jiann B P, et al. Effect of clomiphene on Ca²⁺ movement in human prostate cancer cells [J]. Life Sciences, 2002, 70(26): 3167-3178.

[2]. London S N, et al. Clomiphene citrate-induced perturbations during meiotic maturation and cytogenetic abnormalities in mouse oocytes in vivo and in vitro [J]. Fertility and sterility, 2000, 73(3): 620-626.

[3]. Akintoye O O, et al. Synergistic action of carvedilol and clomiphene in mitigating the behavioral phenotypes of letrozole-model of PCOS rats by modulating the NRF2/NFKB pathway [J]. Life Sciences, 2023, 324: 121737.

Caution: Product has not been fully validated for medical applications. For research use only.

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