

Product Data Sheet

Product Name: Tamoxifen Citrate

Cat. No.: GC11669

Chemical Properties

Cas. No. 54965-24-1

Chemical Name 2-[4-[(Z)-1,2-diphenylbut-1-enyl]phenoxy]-N,N-dimethylethanamine;2-hydroxypropane-1,2,3-tricarboxylic acid

SMILES CCC(=C(C1=CC=CC=C1)C2=CC=C(C=C2)OCCN(C)C)C3=CC=CC=C3.C(C(=O)O)C(C(=O)O)(C(=O)O)O

Formula C32H37NO8

M.Wt 563.64

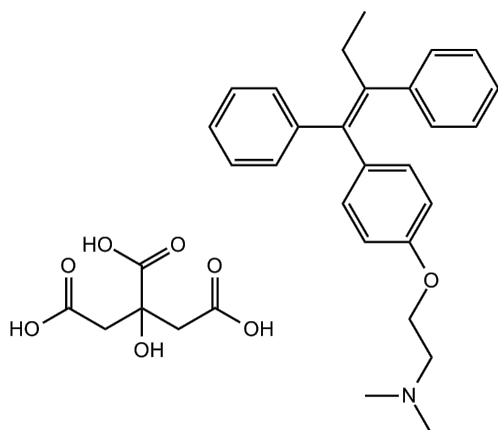
Solubility $\geq 28.2\text{mg/mL}$ in EtOH with gentle warming; 100mg/mL in DMSO

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

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Animal experiment:

Mice[3]Seven-week old TmcsMed1-/- mice and the wild-type littermates are then administered Tamoxifen intraperitoneally at a daily dose of 65 mg/kg body weight for 5 days and then killed at selected intervals after initiation of Tamoxifen treatment. For each experiment 3 to 5 mice for control and csMed1-/- are used. To obtain survival curve 41 csMed1-/- and 41 csMed1fl/fl mice are used. Thirteen TmcsMed-/- mice and the same number of littermates are used for the survival curve experiments using Tamoxifen inducible model. The specific criteria for animal euthanasia included absence of food or water intake, slow or no mobility, weak or absence of heart beat, absence of palpitation of the chest as well as absence of respiratory movement. Mice are euthanized by intraperitoneal pentobarbital injection at the dose of 150mg/kg body weight to minimize suffering.

References:

- [1]. Osborne CK. Tamoxifen in the treatment of breast cancer. N Engl J Med. 1998 Nov 26;339(22):1609-18.
- [2]. Hawariah A, et al. In vitro response of human breast cancer cell lines to the growth-inhibitory effects of styrylpyrone derivative (SPD) and assessment of its antiestrogenicity. Anticancer Res. 1998 Nov-Dec;18(6A):4383-6.
- [3]. Jia Y, et al. Cardiomyocyte-Specific Ablation of Med1 Subunit of the Mediator Complex Causes Lethal DilatedCardiomyopathy in Mice. PLoS One. 2016 Aug 22;11(8):e0160755.
- [4]. Zhao R, et al. Tamoxifen enhances the Hsp90 molecular chaperone ATPase activity. PLoS One. 2010 Apr 1;5(4):e9934.

Background

Tamoxifen Citrate (ICI 46474) is a selective estrogen receptor modulator (SERM) which blocks estrogen action in breast cells and can activate estrogen activity in other cells, such as bone, liver, and uterine cells[1][2][3]. Tamoxifen Citrate is a potent Hsp90 activator and enhances the Hsp90 molecular chaperone ATPase activity[4].

Tamoxifen Citrate (ICI 46474) shows strong inhibition of MCF-7 cells (EC50=1.41 μ M) and to a lesser

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

extent the T47D cells ($EC_{50}=2.5 \mu M$) but does not affect the MDA-MB-231 cells[2].

The Tamoxifen Citrate-inducible gene knockout strategy has clear advantages in that expression of a gene can be ablated in adult mice at will in a tissue specific manner. To study the role of Med1 in adult heart, 7-week old *TmcsMed1*^{-/-} mice are given a daily intraperitoneal injection of Tamoxifen Citrate at a dose of 65 mg/kg for 5 days and killed at selected intervals thereafter. qPCR analysis of RNA shows that the Med1 expression begin to decrease after 3 days of Tamoxifen Citrate injection (about 70% decrease), and by 5 days of injection, Med1 expression is almost non-detectable in the heart. Tamoxifen Citrate-inducible cardiac-specific disruption of Med1 (*TmcsMed1*^{-/-}) in adult mice causes dilated cardiomyopathy[3].

References:

- [1]. Osborne CK. Tamoxifen in the treatment of breast cancer. *N Engl J Med*. 1998 Nov 26;339(22):1609-18.
- [2]. Hawariah A, et al. In vitro response of human breast cancer cell lines to the growth-inhibitory effects of styrylpyrone derivative (SPD) and assessment of its antiestrogenicity. *Anticancer Res*. 1998 Nov-Dec;18(6A):4383-6.
- [3]. Jia Y, et al. Cardiomyocyte-Specific Ablation of Med1 Subunit of the Mediator Complex Causes Lethal DilatedCardiomyopathy in Mice. *PLoS One*. 2016 Aug 22;11(8):e0160755.
- [4]. Zhao R, et al. Tamoxifen enhances the Hsp90 molecular chaperone ATPase activity. *PLoS One*. 2010 Apr 1;5(4):e9934.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA