

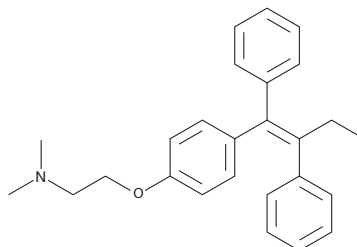
# Product Information



## Tamoxifen

Catalog No. 13258

**CAS Registry No.:** 10540-29-1  
**Formal Name:** 2-[4-[(1Z)-1,2-diphenyl-1-buten-1-yl]phenoxy]-N,N-dimethyl-ethanamine  
**MF:** C<sub>26</sub>H<sub>29</sub>NO  
**FW:** 371.5  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that tamoxifen be stored as supplied at -20°C. It should be stable for at least two years.

Tamoxifen is supplied as a crystalline solid. A stock solution may be made by dissolving the tamoxifen in the solvent of choice. Tamoxifen is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of tamoxifen in ethanol and DMF is approximately 20 mg/ml and approximately 2 mg/ml in DMSO.

Tamoxifen is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tamoxifen should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Tamoxifen has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

There are two homologous nuclear receptors for the hormone estradiol (estrogen), commonly called ER $\alpha$  and ER $\beta$ . Receptor activation leads to the formation of homo and heterodimers, which in turn interact with accessory proteins to regulate gene transcription. Tamoxifen is a selective estrogen receptor modulator, evoking tissue-dependent effects. It is an antagonist of ER action in breast tissue and breast cancer cells and is reported to be effective in the treatment of early breast cancer to prevent tumor growth.<sup>1,2</sup> Importantly, tamoxifen has been reported to act as an ER agonist in bone and blood vessels, helping to minimize osteoporosis and reduce the risk of cardiovascular disease in post-menopausal women.<sup>3</sup> Also, tamoxifen is a partial ER agonist in uterine tissues and is reported to increase the risk of endometrial carcinoma.<sup>4</sup>

### References

1. Horwitz, K.B. and McGuire, W.L. Nuclear mechanisms of estrogen action. Effects of estradiol and anti-estrogens on estrogen receptors and nuclear receptor processing. *The Journal of Biological Chemistry* **253**(22), 8185-8191 (1978).
2. Clarke, M., Collins, R., Davies, C., *et al.* Tamoxifen for early breast cancer: An overview of the randomised trials. *Lancet* **351**, 1451-1467 (1998).
3. Tonetti, D.A. and Jordan, V.C. Targeted anti-estrogens to treat and prevent diseases in women. *Molecular Medicine Today* 218-223 (1996).
4. Jordan, V.C. and Assikis, V.J. Endometrial carcinoma and tamoxifen: Clearing up a controversy. *Clinical Cancer Research* **1**, 467-472 (1995).

### Related Products

Estradiol EIA Kit - Cat. No. 582251 • Daidzein - Cat. No. 10005166 • Estradiol - Cat. No. 10006315 • Mifepristone - Cat. No. 10006317 • Norgestrel - Cat. No. 10006319 • Estriol - Cat. No. 10006484 • Estrone - Cat. No. 10006485 • Ethynyl Estradiol - Cat. No. 10006486 • Estradiol Benzoate - 10006487 • Gestrinone - Cat. No. 10006488 • Estrogen Receptor Polyclonal Antibody - Cat. No. 10010550 • Fulvestrant - Cat. No. 10011269

### Cayman Chemical

**Mailing address**  
1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

**Phone**  
(800) 364-9897  
(734) 971-3335

**Fax**  
(734) 971-3640

**E-Mail**  
custserv@caymanchem.com

**Web**  
www.caymanchem.com

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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