

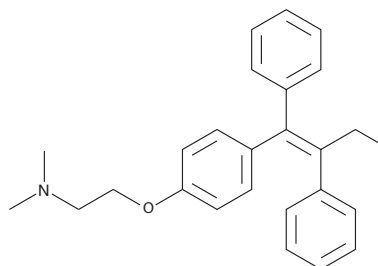
# PRODUCT INFORMATION



## Tamoxifen

Item 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:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 238, 278 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

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

### Description

Tamoxifen is an estrogen receptor antagonist (IC<sub>50</sub> = 45 nM for the rabbit receptor).<sup>1</sup> It reduces the proliferation of MCF-7 breast cancer cells when used at a concentration of 10 μM.<sup>2</sup> Tamoxifen is active against *S. cerevisiae*, *C. neoformans*, and five *Candida* species (MICs = 12, 64, and 8-64 μg/ml, respectively).<sup>3</sup> It decreases tumor proliferation, weight, and volume in an MCF-7 mouse xenograft model when administered at a dose of 100 μg/animal per day.<sup>4</sup> Tamoxifen (0.8 mg/kg every two weeks) also reduces proteinuria and increases survival in an NZBWF1 mouse model of systemic lupus erythematosus (SLE).<sup>5</sup> It can be used as a regulator for Cre-recombinase inducible gene expression *in vivo*.<sup>6</sup> Formulations containing tamoxifen have been used in the treatment of estrogen receptor-positive breast cancer.

### References

1. Löser, R., Seibel, K., Roos, W., *et al.* *In vivo* and *in vitro* antiestrogenic action of 3-hydroxytamoxifen, tamoxifen and 4-hydroxytamoxifen. *Eur. J. Cancer Clin. Oncol.* **21(8)**, 985-990 (1985).
2. Lippman, M., Bolan, G., and Huff, K. The effects of estrogens and antiestrogens on hormone-responsive human breast cancer in long-term tissue culture. *Cancer Res.* **36(12)**, 4595-4601 (1976).
3. Dolan, K., Montgomery, S., Buchheit, B., *et al.* Antifungal activity of tamoxifen: *In vitro* and *in vivo* activities and mechanistic characterization. *Antimicrob. Agents Chemother.* **53(8)**, 3337-3346 (2009).
4. Long, B.J., Jelovac, D., Handratta, V., *et al.* Therapeutic strategies using the aromatase inhibitor letrozole and tamoxifen in a breast cancer model. *J. Natl. Cancer Inst.* **96(6)**, 456-465 (2004).
5. Wu, W.-M., Lin, B.-F., Su, Y.-C., *et al.* Tamoxifen decreases renal inflammation and alleviates disease severity in autoimmune NZB/W F1 mice. *Scand. J. Immunol.* **52(4)**, 393-400 (2000).
6. Chen, M., Lichtler, A.C., Sheu, T.-J., *et al.* Generation of a transgenic mouse model with chondrocyte-specific and tamoxifen-inducible expression of Cre recombinase. *Genesis* **45(1)**, 44-50 (2007).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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