Small Molecules

Tamoxifen

Estrogen signaling pathway modulator; Modulates selective estrogen receptor and estrogen-related receptor

Catalog #	72662	500 mg
	72664	5 g
	72666	10 g

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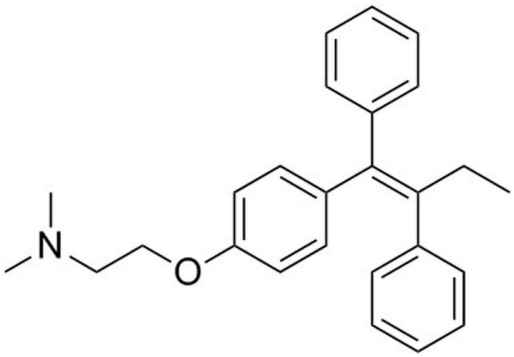
Product Description

Tamoxifen is a selective estrogen receptor modulator (SERM), with tissue-specific antagonistic or agonistic effects. Receptor activation leads to the formation of homo- and hetero-dimers, which in turn interact with accessory proteins to regulate gene transcription. Tamoxifen is commonly used to activate Cre-ER in transgenic conditional models.

Molecular Name:	Tamoxifen
Alternative Names:	trans-Tamoxifen
CAS Number:	10540-29-1
Chemical Formula:	$C_{26}H_{29}NO$
Molecular Weight:	371.5 g/mol
Purity:	≥ 95%
Chemical Name:	2-[4-[(1Z)-1,2-diphenyl-1-buten-1-yl]phenoxy]-N,N-dimethyl-ethanamine
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 5.4 mM · Absolute ethanol ≤ 50 mM · DMF ≤ 50 mM For example, to prepare a 10 mM stock solution in absolute ethanol, resuspend 10 mg in 2.69 mL of absolute ethanol. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

CELL LINE DEVELOPMENT
· Used in transgenic models to induce Cre-mediated recombination in conjunction with Cre-ER, a fusion protein consisting of Cre recombinase and a mutant form of the estrogen receptor hormone-binding domain that specifically binds tamoxifen but not estrogen (Feil et al.; Zhang et al.).
CANCER RESEARCH
· Inhibits growth in the human breast cancer cell line, MCF-7 (Katzenellenbogen et al.).
· Antagonist of estrogen receptor action in breast tissue and breast cancer cells (Abe et al.; Horwitz et al.).

References

Abe O et al. (1998) Tamoxifen for early breast cancer: an overview of the randomised trials. Lancet 351(9114): 1451–67.
Feil R et al. (1997) Regulation of Cre recombinase activity by mutated estrogen receptor ligand-binding domains. Biochem Biophys Res Commun 237(3): 752–7.
Horwitz KB & McGuire WL. (1978) Nuclear mechanisms of estrogen action. Effects of estradiol and anti-estrogens on estrogen receptors and nuclear receptor processing. J Biol Chem 253(22): 8185–91.
Katzenellenbogen BS et al. (1984) Bioactivities, estrogen receptor interactions, and plasminogen activator-inducing activities of tamoxifen and hydroxy-tamoxifen isomers in MCF-7 human breast cancer cells. Cancer Res 44(1): 112–9.
Zhang Y et al. (1996) Inducible site-directed recombination in mouse embryonic stem cells. Nucleic Acids Res 24(4): 543–8.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).