

**Product Name:** (Z)-4-Hydroxytamoxifen

**Catalog No.:** 3412

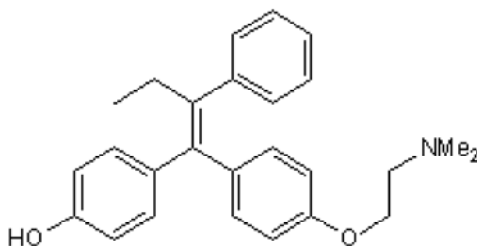
**Batch No.:** 12

CAS Number: 68047-06-3

IUPAC Name: 4-[(1Z)-1-[4-[2-(Dimethylamino)ethoxy]phenyl]-2-phenyl-1-buten-1-yl]phenol

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>26</sub>H<sub>29</sub>NO<sub>2</sub>.  
**Batch Molecular Weight:** 387.51  
**Physical Appearance:** White solid  
**Solubility:** DMSO to 100 mM  
 ethanol to 20 mM  
**Storage:** Store at +4°C  
**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**HPLC:** Shows 99.0% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure  
**Microanalysis:**

|             | Carbon | Hydrogen | Nitrogen |
|-------------|--------|----------|----------|
| Theoretical | 80.59  | 7.54     | 3.61     |
| Found       | 80.52  | 7.55     | 3.9      |

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

(Z)-4-Hydroxytamoxifen is an estrogen receptor antagonist (IC<sub>50</sub> = 27 μM). (Z)-4-Hydroxytamoxifen is a Tamoxifen (Cat. No. 0999) metabolite; that exhibits greater potency than the parent compound. (Z)-4-Hydroxytamoxifen also activates intein-linked inactive Cas9, reducing off-target CRISPR-mediated gene editing; system has ~25-fold higher specificity than wtCas9. (Z)-4-Hydroxytamoxifen binds to voltage-gated sodium channels, near the intracellular gate and inhibits the sodium current by delaying channel recovery from the inactivated state (IC<sub>50</sub> values are 297 nM and 2.1 μM for NavM and human Nav, respectively in HEK cells); this inhibito... Please see product specific page on www.tocris.com for full description.

**Physical and Chemical Properties:**

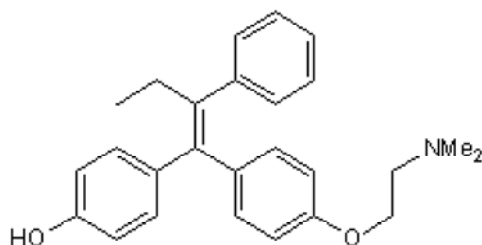
Batch Molecular Formula: C<sub>26</sub>H<sub>29</sub>NO<sub>2</sub>.

Batch Molecular Weight: 387.51

Physical Appearance: White solid

**Minimum Purity:** ≥98%

**Batch Molecular Structure:**



**Storage:** Store at +4°C

**CAUTION** - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

**Solubility & Usage Info:**

DMSO to 100 mM

ethanol to 20 mM

**CAUTION** - This product has been shown\* to isomerise rapidly once in solution in most solvents, especially those with a low dielectric constant. Therefore, we recommend that, as far as possible, solutions should be made up and used immediately. The isomerisation process can be precluded by storage at -25°C in the dark as a solution in THF containing ca. 0.025% BHT.\*  
\*Katzenellenbogen *et al*/Synthesis of the (E) and (Z) isomers of the antiestrogen tamoxifen and its metabolite, hydroxytamoxifen, in tritium-labeled form (1982) J. Org. Chem. 47 2387.

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Sula *et al*** (2021) A tamoxifen receptor within a voltage-gated sodium channel. *Mol.Cell.* **81** 1160. PMID: 33503406.

**Davis *et al*** (2015) Small molecule-triggered Cas9 protein with improved genome-editing specificity. *Nat.Chem.Biol.* **11** 316. PMID: 25848930.

**Desta *et al*** (2004) Comprehensive evaluation of tamox. sequential biotransformation by the human cytochrome P450 system in vitro: Prominent roles for CYP3A and CYP2D6. *J.Pharm.Exp.Ther.* **310** 1062. PMID: 15159443.

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