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产品名称：Endoxifen (hydrochloride)
产品别名：因多昔芬盐酸盐

生物活性：

Description	Endoxifen hydrochloride, the active metabolite of Tamoxifen, is a potent antiestrogen that targets estrogen receptor.
IC_{50} & Target	Estrogen receptor[1]
In Vitro	Endoxifen blocks ER-alpha transcriptional activity and inhibits estrogen-induced breast cancer cell proliferation. These studies reveal that Endoxifen concentrations between 10 and 1000 nM enhance ERα protein degradation. Lower concentrations of Endoxifen (≤1 nM) do not affect ERα protein levels[1].
In Vivo	GLAST::Cre(ERT);ROSA26loxP/loxP mice are injected intraventricularly with 5 μL 5 mM Endoxifen, and mice injected with 4 μL Adeno-Cre virus [109 plaque-forming units (pfu)] serve as positive control. At 7-10 days after ICV injection, mice are sacrificed and the SVZ dissected to isolate and derive stem and progenitor cells. These stem/progenitor cells are then cultured in permissive medium to form neurospheres and assayed for recombination. In our unpassaged preparations is found derived from Endoxifen-injected GLAST::CreERT2;ROSA26loxP/loxP mice that 1.9% of neurospheres show recombination, compared to a higher rate of 4.3% of neurospheres in Adeno-Cre-recombined ROSA26loxP/loxP mice[2].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 35 mg/mL** (**85.38 mM**) **H_2O : < 0.1 mg/mL** (insoluble) * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4393 mL	12.1966 mL	24.3932 mL
5 mM	0.4879 mL	2.4393 mL	4.8786 mL
10 mM	0.2439 mL	1.2197 mL	2.4393 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: ≥ 2.5 mg/mL (6.10 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (6.10 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。

	2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (6.10 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (6.10 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。
References	[1]. Wu X, et al. The tamoxifen metabolite, Endoxifen, is a potent antiestrogen that targets estrogen receptor alpha fordegradation in breast cancer cells. Cancer Res. 2009 Mar 1;69(5):1722-7. [2]. Benedykcinska A, et al.Generation of brain tumours in mice by Cre-mediated recombination of neural progenitors in situ with the tamoxifen metabolite Endoxifen. Dis Model Mech. 2016 Feb;9(2):211-20.

实验参考：

Cell Assay	MCF7 and Ishikawa cells are grown in 10% triple charcoal-stripped serum-containing medium for 3 d. The cells are then plated at a density of 2,000 cells per well in 96-well tissue culture plates and treated as indicated every 48 h. Cell proliferation assays are conducted 8 days after the first treatment using a CellTiter-Glo Luminescent Cell Viability kit[1].
Animal Administration	Mice[2] GLAST::CreERT2 mice are used. Tamoxifen is injected as active metabolite 4-hydroxytamoxifen (4-OH-TAM), or 4-hydroxy-N-desmethyltamoxifen (Endoxifen). 4-OH-TAM is dissolved at 1 mM concentration in 2% ethanol/PBS and 5 μL injected into the ventricles. Endoxifen has not been used before for the induction of the ERT2 system. Endoxifen hydrochloride hydrate has a recommended solubility of over 10 mg/mL (25 mM) in 100% DMSO, corresponding to a maximum concentration of 25 mM or a dose of 125 nmol in a 5 μL volume. At this concentration, a proportion of mice developed neurological signs suggestive of neurotoxicity. Subsequently, concentrations of 2.5, 5, 10, 12.5 and 25 mM, dissolved in 10, 20, 40, 50 and 100% DMSO, respectively, corresponding to a drug dose of 12.5, 25, 50, 62.5 and 125 nmol are used. For testing DMSO toxicity, groups of three mice are injected with 5 uL PBS, 50% DMSO in PBS or 100% DMSO in PBS. Mice are culled 9 days after injection and coronally sectioned brains are stained for cleaved caspase 3, GFAP and Iba1.
References	[1]. Wu X, et al. The tamoxifen metabolite, Endoxifen, is a potent antiestrogen that targets estrogen receptor alpha fordegradation in breast cancer cells. Cancer Res. 2009 Mar 1;69(5):1722-7. [2]. Benedykcinska A, et al.Generation of brain tumours in mice by Cre-mediated recombination of neural progenitors in situ with the tamoxifen metabolite Endoxifen. Dis Model Mech. 2016 Feb;9(2):211-20.