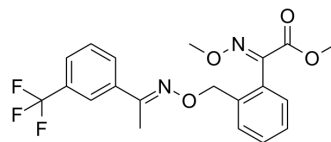


## Trifloxystrobin

<b>Cat. No.:</b>	HY-123230		
<b>CAS No.:</b>	141517-21-7		
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>19</sub> F <sub>3</sub> N <sub>2</sub> O <sub>4</sub>		
<b>Molecular Weight:</b>	408.37		
<b>Target:</b>	Fungal; Caspase; PARP; Apoptosis		
<b>Pathway:</b>	Anti-infection; Apoptosis; Cell Cycle/DNA Damage; Epigenetics		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 125 mg/mL (306.09 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	2.4488 mL	12.2438 mL	24.4876 mL
		5 mM	0.4898 mL	2.4488 mL	4.8975 mL
10 mM		0.2449 mL	1.2244 mL	2.4488 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.17 mg/mL (5.31 mM); Clear solution  2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.17 mg/mL (5.31 mM); Clear solution				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Trifloxystrobin (CGA 279202) is a type of fungicide. Trifloxystrobin has toxicity, antiparasitic activity and induce apoptosis, oxidative stress and DNA damage. Trifloxystrobin can be used for the reaersch of fungal diseases <sup>[1][2][3][4][5]</sup> .		
<b>IC<sub>50</sub> &amp; Target</b>	Caspase 3	Caspase-8	Caspase-9
<b>In Vitro</b>	Trifloxystrobin (2-500 μM, 24-48 h) reduces the viability of HaCaT cells <sup>[1]</sup> . Trifloxystrobin (0.5 μM, 48 h) induces apoptosis via the tumor necrosis factor-related apoptosis-inducing ligand (TRAIL)-mediated pathway in HaCaT cells <sup>[1]</sup> . Trifloxystrobin (25-200 μM, 4-48 h) have neurotoxicity in differentiated human SH-SY5Y cells <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

### Cell Cytotoxicity Assay<sup>[1]</sup>

Cell Line:	HaCaT cell
Concentration:	2 µM, 3.91 µM, 7.81 µM, 14.63 µM, 31.25 µM, 62.50 µM, 125 µM, 250 µM, 500 µM
Incubation Time:	24 h, 48 h
Result:	Decreased the cell viability in a concentration-dependent manner. Showed the IC50 value of cell viability at 24 h was calculated to be 22.9 µM, and that at 48 h was 5.14 µM.

### Apoptosis Analysis<sup>[1]</sup>

Cell Line:	HaCaT cell
Concentration:	0.5 µM
Incubation Time:	24 h, 48 h
Result:	Induced the expression of pro-apoptotic proteins, apaf-1, procasp-9, procasp-8, and cyt c. Observed both only Annexin V-FITC (green)-positive cells and Annexin V-FITC (green)-/PI (red)-positive cells.

### In Vivo

Trifloxystrobin (30.0-58.6 µg/L, zebrafish embryos were exposed to trifloxystrobin for 96 h post-fertilization (hpf)) is highly toxic to zebrafish embryos<sup>[3]</sup>.  
Trifloxystrobin (Soils were prepared by spiking 50 g of soil with 1mL of trifloxystrobin-acetonitrile solution. Following mixing and acetonitrile volatilization, spiked soil was mixed with additional soil to prepare 500 g aliquots containing 0.1, 1.0 and 2.5 mg/kg trifloxystrobin for 7-56 days) induces oxidative stress and DNA damage in two soils<sup>[4]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Zebrafish embryos <sup>[3]</sup>
Dosage:	30.0 µg/L, 37.5 µg/L, 47.0 µg/L, 58.6 µg/L
Administration:	Zebrafish embryos were exposed to trifloxystrobin
Result:	Caused severe developmental abnormalities of zebrafish embryos. Induced oxidative stress in embryos. Changed the transcription of immune related genes of embryos.

## REFERENCES

- [1]. Jang Y, et al. Trifloxystrobin induces tumor necrosis factor-related apoptosis-inducing ligand (TRAIL)-mediated apoptosis in HaCaT, human keratinocyte cells [J]. Drug and Chemical Toxicology, 2017, 40(1): 67-73.
- [2]. Nguyen K, et al. Neurotoxicity assessment of Qol strobilurin fungicides azoxystrobin and trifloxystrobin in human SH-SY5Y neuroblastoma cells: Insights from lipidomics and mitochondrial bioenergetics[J]. Neurotoxicology, 2022, 91: 290-304.
- [3]. Li H, et al. Developmental toxicity, oxidative stress and immunotoxicity induced by three strobilurins (pyraclostrobin, trifloxystrobin and picoxystrobin) in zebrafish embryos [J]. Chemosphere, 2018, 207: 781-790.
- [4]. Wu R, et al. Oxidative stress and DNA damage induced by trifloxystrobin on earthworms (Eisenia fetida) in two soils [J]. Science of The Total Environment, 2021, 797: 149004.

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[5]. Villares M, et al. Trifloxystrobin blocks the growth of Theileria parasites and is a promising drug to treat Buparvaquone resistance [J]. Communications Biology, 2022, 5(1): 1253.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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