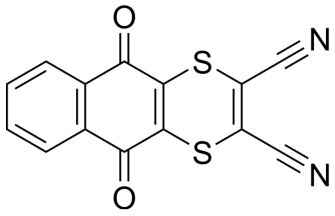
Dithianon

Cat. No.:	HY-B1975
CAS No.:	3347-22-6
Molecular Formula:	$C_{14}H_4N_2O_2S_2$
Molecular Weight:	296.32
Target:	Fungal; Reactive Oxygen Species
Pathway:	Anti-infection; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Dithianon is a broad-spectrum anthraquinone fungicide with good adherence to the surface of leaves and fruits. Dithianon is used to control several several fungal of some fruits and vegetables, as anthracnose (***Colletotrichum sp.***, ***Elsinoe ampelina***), mildew (***Plasmopara viticola***), phomopsis (***Phomopsis viticola***), among others[1][2].
IC_{50} & Target	Reactive oxygen species (ROS)[1] Colletotrichum sp.; Elsinoe ampelina; Plasmopara viticola; Phomopsis viticola[1]
In Vitro	When exponentially aerobic growing cells of S. cerevisiae are submitted to acute Dithianon treatment they loss cell wall and membrane integrity, dying by necrosis, and this behavior is associated to a depletion of reduced proteic and non-proteic thiol groups. An important increase of cellular reactive oxygen species (ROS) associated to mitochondrial membrane potential modifications on Dithianon treated cells are also detected[1]. In filamentous fungus, Dithianon inhibits mycelial growth and conidial germination. Studies on Ehrlich ascites carcinoma and yeast cells showed that Dithianon inhibits respiration and fermentation affecting several thiol enzymes of the glycolytic pathway as hexokinase, phosphofructokinase, and glyceraldeyde-3-phosphate dehydrogenase[1]. Dithianon has in vitro cytotoxic effect and affect cell transforming activity of BLAB/c 3 T3 cells[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The activity of testosterone hydroxylase of liver microsomes derived from male mice is increased when they are treated with acute doses of Dithianon, while in females an inactivating effect is observed[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Scariot FJ, et al. Necrotic cell death induced by dithianon on Saccharomyces cerevisiae. Pestic Biochem Physiol. 2018 Jul;149:137-142.

[2]. Halasz I, et al. Structures of four polymorphs of the pesticide dithianon solved from X-ray powder diffraction data. Acta Crystallogr B. 2012 Dec;68(Pt 6):661-6.

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

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