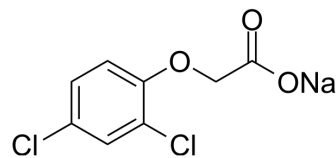


2,4-D sodium salt

Cat. No.:	HY-18572A
CAS No.:	2702-72-9
Molecular Formula:	C ₈ H ₅ Cl ₂ NaO ₃
Molecular Weight:	243.02
Target:	DNA/RNA Synthesis; Apoptosis
Pathway:	Cell Cycle/DNA Damage; Apoptosis
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



BIOLOGICAL ACTIVITY

Description	2,4-D sodium salt (Sodium 2,4-dichlorophenoxyacetate) is a selective herbicide that can be orally active for the control of broad-leaved weeds. 2,4-D sodium salt can induce < b>apoptosis. 2,4-D sodium salt inhibits DNA and protein synthesis, thereby preventing normal plant growth and development ^{[1][2][3]} .																								
In Vitro	<p>2, 4-D sodium salt (25-200 μM, 72 h) inhibits the cell viability of A549 and WI38 with IC₅₀ values of 126 ± 2.25μM and 115 ± 4.39μM, respectively. By influencing cell cycle, apoptosis was induced^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>A549, W138</td> </tr> <tr> <td>Concentration:</td> <td>25, 50, 75, 100, 150, 200 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>72 h</td> </tr> <tr> <td>Result:</td> <td>Inhibited cell viability in a dose-dependent manner.</td> </tr> </table> <p>Cell Cytotoxicity Assay^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>A549</td> </tr> <tr> <td>Concentration:</td> <td>50, 100, 150 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>72 h</td> </tr> <tr> <td>Result:</td> <td>The G0/G1 population decreased to about 57%, 43% and 31%, respectively.</td> </tr> </table> <p>Apoptosis Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>A549, W138</td> </tr> <tr> <td>Concentration:</td> <td>100, 150 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>72 h</td> </tr> <tr> <td>Result:</td> <td>The early apoptotic population increased to 44% in A549 cells and 57% in WI38 cells, and</td> </tr> </table>	Cell Line:	A549, W138	Concentration:	25, 50, 75, 100, 150, 200 μM	Incubation Time:	72 h	Result:	Inhibited cell viability in a dose-dependent manner.	Cell Line:	A549	Concentration:	50, 100, 150 μM	Incubation Time:	72 h	Result:	The G0/G1 population decreased to about 57%, 43% and 31%, respectively.	Cell Line:	A549, W138	Concentration:	100, 150 μM	Incubation Time:	72 h	Result:	The early apoptotic population increased to 44% in A549 cells and 57% in WI38 cells, and
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	the late apoptotic population increased to 18% in A549 cells and 10% in WI38 cells.
	Western Blot Analysis ^[2]
Cell Line:	A549, WI38
Concentration:	100, 150 μ M
Incubation Time:	72 h
Result:	Up-regulated p53 and Bax proteins, down-regulated Bcl-2 and pro caspase 3.
In Vivo	2,4-D sodium salt (100 or 200 mg/kg, gavage for 30 days) has toxic effects on the reproductive system of male rats ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
	Animal Model: Adult Wistar male rats ^[3]
	Dosage: 100 or 200 mg/kg
	Administration: i.g.
	Result: Decreased the testis , seminal vesicles and prostate relative weight. Decreased the number of spermatozoa and sperm motility. Increased the level of FSH and LH.

REFERENCES

- [1]. Ganguli A, et al. 2, 4-Dichlorophenoxyacetic acid induced toxicity in lung cells by disruption of the tubulin-microtubule network. *Toxicology Research*, 2014, 3(2): 118-130.
- [2]. Marouani N, et al. Effects of oral administration of 2,4-dichlorophenoxyacetic acid (2,4-D) on reproductive parameters in male Wistar rats. *Environ Sci Pollut Res Int*. 2017 Jan;24(1):519-526.
- [3]. Germaine KJ, et al. Bacterial endophyte-enhanced phytoremediation of the organochlorine herbicide 2,4-dichlorophenoxyacetic acid. *FEMS Microbiol Ecol*. 2006 Aug;57(2):302-10.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA