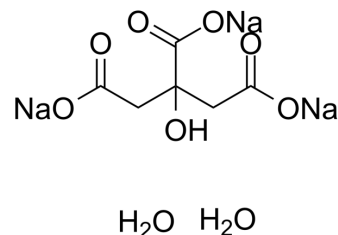


## Sodium citrate dihydrate

<b>Cat. No.:</b>	HY-B1610
<b>CAS No.:</b>	6132-04-3
<b>Molecular Formula:</b>	C <sub>6</sub> H <sub>9</sub> Na <sub>3</sub> O <sub>9</sub>
<b>Molecular Weight:</b>	294.1
<b>Target:</b>	Bacterial; Endogenous Metabolite; Apoptosis
<b>Pathway:</b>	Anti-infection; Metabolic Enzyme/Protease; Apoptosis
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	H <sub>2</sub> O : 125 mg/mL (425.03 mM; Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>Concentration</b>				
		<b>1 mM</b>		3.4002 mL	17.0010 mL	34.0020 mL
		<b>5 mM</b>		0.6800 mL	3.4002 mL	6.8004 mL
	<b>10 mM</b>		0.3400 mL	1.7001 mL	3.4002 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (340.02 mM); Clear solution; Need ultrasonic					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Sodium citrate dehydrate (Trisodium citrate dihydrate) is a natural product with oral activity that can be found in citrus fruits. Sodium citrate dehydrate can inhibit the proliferation of tumor cells and induce apoptosis. Sodium citrate dehydrate has antibacterial, anti-tumor and antioxidant activities. Sodium citrate dehydrate can be prepared as a cosolvent or buffer <sup>[1]</sup> [2][3].
<b>IC<sub>50</sub> &amp; Target</b>	Human Endogenous Metabolite
<b>In Vitro</b>	Sodium citrate dehydrate (100 μM) can enhance the inhibition effect of rosemary acid (RA) on Vibrio bacterial <sup>[1]</sup> . Sodium citrate dehydrate (5-20 mM, 24-48 h) induces apoptosis of human gastric cancer cell line MGC-803 by inhibiting glycolysis and promoting mitochondria-regulated apoptosis pathway <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Viability Assay <sup>[2]</sup>

Cell Line:	MGC-803
Concentration:	1.25, 2.5, 5, 10,15, 20, 30, 40, 60 mM
Incubation Time:	24, 48 h
Result:	Decreased cell viability in a dose-and time-dependent manner. The IC <sub>50</sub> value is 10.08 mM after 48 h.

#### Apoptosis Analysis<sup>[2]</sup>

Cell Line:	MGC-803
Concentration:	5, 10, 20 mM
Incubation Time:	24 h
Result:	Decreased the mRNA and protein expressions of anti-apoptotic Bcl-2 and Survivin. Increased the mRNA and protein expression level of proapoptotic Bax, caspase-3 and Cyt-c.

#### Western Blot Analysis<sup>[2]</sup>

Cell Line:	MGC-803
Concentration:	5, 10, 20 mM
Incubation Time:	24, 48 h
Result:	Induced cell apoptosis in a dose-and time-dependent manner. Increased the G2/M phase arrest.

#### In Vivo

Sodium citrate dehydrate (216, 746 mg/kg, gavage for 16 weeks) can inhibit endoplasmic reticulum stress in rats with chronic renal failure induced by adenine (HY-B0152)<sup>[3]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adenine-Induced Chronic Renal Failure Rat Model <sup>[3]</sup>
Dosage:	216, 746 mg/kg
Administration:	i.g.
Result:	Decreased the expression of renal fibrosis-related proteins TGF-β1 and CIV. Decreased the expression of PERK, ATF6 and CHOP.

#### CUSTOMER VALIDATION

- Food Chem. 2022: 134807.
- Insect Biochem Mol Biol. 2023 May 12;103958.
- New J Chem. 03 Aug 2022.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

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## REFERENCES

- [1]. Lu P, et al. Rosmarinic Acid and Sodium Citrate Have a Synergistic Bacteriostatic Effect against *Vibrio* Species by Inhibiting Iron Uptake. *Int J Mol Sci*. 2021 Dec 1;22(23):13010.
- [2]. Guo X, et al. 3-Bromopyruvate and sodium citrate induce apoptosis in human gastric cancer cell line MGC-803 by inhibiting glycolysis and promoting mitochondria-regulated apoptosis pathway. *Biochem Biophys Res Commun*. 2016 Jun 17;475(1):37-43.
- [3]. Ou Y, et al. Sodium Citrate Inhibits Endoplasmic Reticulum Stress in Rats with Adenine-Induced Chronic Renal Failure. *Am J Nephrol*. 2015;42(1):14-21.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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