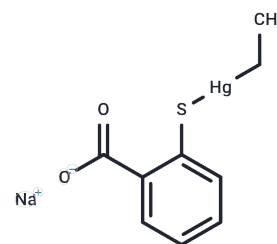


Thimerosal

Chemical Properties

CAS No. :	54-64-8
Formula:	C ₉ H ₉ HgNaO ₂ S
Molecular Weight:	404.81
Storage:	Keep away from moisture Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	Thimerosal is a mercury-containing vaccine preservative, which is currently considered one of the suspected causative agents of neurodevelopmental disorders.
Targets(IC50)	Antibiotic
In vivo	<p>Thimerosal increases the density of μ-opioid receptors (MOR) in the periaqueductal gray (PAG) in a dose-dependent manner. High-dose thimerosal significantly elevates MOR density in the dorsomedial periaqueductal gray (DMPAG) and lateral periaqueductal gray (LPAG). At a dose of 3000 μg Hg/kg, thimerosal also increases MOR density in the caudate putamen (CPU). In contrast, two higher doses of thimerosal reduce MOR density in the dentate gyrus (DG) [1].</p> <p>Four intramuscular injections (240 μg Hg/kg) on postnatal days 7, 9, 11, and 15 induce persistent changes in amino acid efflux: elevated glutamate and aspartate levels, accompanied by decreased glycine and alanine levels. These changes remain detectable 10-14 weeks after injection. Four injections of thimerosal at 12.5 μg Hg/kg do not significantly alter glutamate and aspartate concentrations measured by microdialysis. Application of thimerosal to the prefrontal cortex (PFC) via perfusion fluid rapidly increases glutamate efflux.</p> <p>Coadministration of the neurosteroid dehydroepiandrosterone sulfate (DHEAS; 80 mg/kg; intraperitoneal injection) blocks the effects of thimerosal on glutamate and aspartate, whereas administration of the steroid alone has no significant effect on these amino acids. Coadministration of DHEAS and thimerosal in the perfusion fluid also blocks the acute effect of thimerosal on glutamate [2].</p>

Solubility Information

Solubility	H ₂ O: 80 mg/mL (197.62 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4703 mL	12.3515 mL	24.7029 mL
5 mM	0.4941 mL	2.4703 mL	4.9406 mL
10 mM	0.247 mL	1.2351 mL	2.4703 mL
50 mM	0.0494 mL	0.247 mL	0.4941 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Olczak M, et al. Neonatal administration of thimerosal causes persistent changes in mu opioid receptors in the ratbrain. *Neurochem Res.* 2010 Nov;35(11):1840-7.

Duszczuk-Budhathoki M, et al. Administration of thimerosal to infant rats increases overflow of glutamate and aspartate in the prefrontal cortex: protective role of dehydroepiandrosterone sulfate. *Neurochem Res.* 2012 Feb; 37(2):436-47.

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