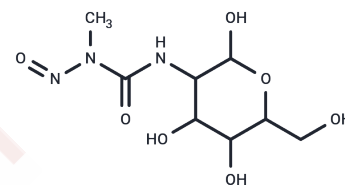


Streptozocin

Chemical Properties

CAS No. :	18883-66-4
Formula:	C ₈ H ₁₅ N ₃ O ₇
Molecular Weight:	265.22
Appearance:	no data available
Storage:	keep away from direct sunlight, keep away from moisture, store at low temperature
	Powder: -20°C for 3 years



Biological Description

Description	Streptozocin (NSC-85998) is an antibiotic that induces DNA methylation. Streptozocin is toxic to insulin-producing pancreatic islet B-cells and is commonly used in the construction of animal models of type 1 diabetes. The product is unstable in solution and is recommended to be dispensed now.
Targets(IC50)	Antibacterial, Antibiotic, Autophagy, DNA Alkylation, DNA Alkylator/Crosslinker, DNA/RNA Synthesis
In vitro	<p>METHODS: Rat β-insulinoma cells Rin-5F were treated with Streptozocin (1-10 mM) for 2-48 h. Cell viability was measured using MTT assay.</p> <p>RESULTS: Maximum inhibition (60-70%) was observed in cells treated with 10 mM Streptozocin for 24 h and 48 h. The cells were treated with Streptozocin (1-10 mM) for 2-48 h, and cell viability was measured by MTT assay. [1]</p> <p>METHODS: Neural stem cells were treated with Streptozocin (2.5 mM) for 2 days and gene expression was detected using RT-qPCR.</p> <p>RESULTS: Streptozocin significantly reduced the relative expression level of GLUT3 mRNA by 46.4%, and did not affect the relative expression level of IR and GLUT1. [2]</p>
In vivo	<p>METHODS: Streptozocin (40 mg/kg in the 50 mM sodium citrate buffer (pH 4.5), ready to use) was administered intraperitoneally to C57BL/6 or CD-1 male mice once daily for five days. Normal food and 10% sucrose water were provided during the administration period, and 10% sucrose water was replaced with normal water on the sixth day.</p> <p>RESULTS: Repeated low doses of Streptozocin induced type 1 diabetes in mice. [3]</p> <p>METHODS: Streptozocin (200 mg/kg in the 50 mM sodium citrate buffer (pH 4.5), ready to use) was administered to C57BL/6 or CD-1 male mice by a single intraperitoneal injection. Normal food and 10% sucrose water were provided after administration, and 10% sucrose water was replaced with normal water on the third day.</p> <p>RESULTS: A single high dose of Streptozocin induced type 1 diabetes in mice. [3]</p>
Cell Research	Streptozocin (STZ) stock solutions of 50 mg/mL in distilled Water (dWater) are freshly prepared for each experiment[2]. Human and murine cell lines are cultured in triplicate in 96-well plates at a density of 2×10^4 cells/well in the absence (untreated control) or presence of various concentrations of ALX (20-3000 μ g/mL) or STZ (1-3000 μ g/mL) for 48 h at 37°C under a humidified atmosphere containing 5% CO ₂ . Cells incubated in complete media including dWater in a final concentration of 0.1% served as control for solvent toxicity and cells incubated in complete medium are used as a control for the experiments. The effects of the tested drugs on tumor cell growth or viability are

determined employing the MTT assay in accordance with the manufacturer's instructions. The IC₅₀ values (drug concentration that induces 50% inhibition of the cell growth) are calculated using the GraphPad Prism 4 program[2].

Solubility Information

Solubility	H ₂ O: 113.3 mg/mL (427.19 mM), Sonication and heating are recommended. DMSO: 16.67 mg/mL (62.84 mM), Sonication is recommended. (The compound is unstable in solution, please use soon.) (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.7705 mL	18.8523 mL	37.7045 mL
5 mM	0.7541 mL	3.7705 mL	7.5409 mL
10 mM	0.377 mL	1.8852 mL	3.7705 mL
50 mM	0.0754 mL	0.377 mL	0.7541 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.

Reference

- Nahdi AMTA, et al. Elucidation of Molecular Mechanisms of Streptozotocin-Induced Oxidative Stress, Apoptosis, and Mitochondrial Dysfunction in Rin-5F Pancreatic β -Cells. *Oxid Med Cell Longev*. 2017;2017:7054272.
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- Sun P, et al. Streptozotocin Impairs Proliferation and Differentiation of Adult Hippocampal Neural Stem Cells in Vitro-Correlation With Alterations in the Expression of Proteins Associated With the Insulin System. *Front Aging Neurosci*. 2018 May 18;10:145.
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