

Streptozotocin

Chemical Properties

CAS No. : 18883-66-4

Formula: C₈H₁₅N₃O₇

Molecular Weight: 265.22

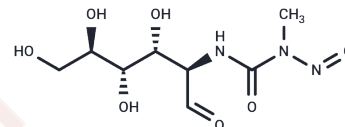
Storage:

Keep away from direct sunlight, Keep away from moisture, Store at low temperature, Store under nitrogen, The compound is unstable in solution.

Please use soon

Powder: -20°C for 3 years

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Streptozotocin (Streptozocin, NSC-85998) is an antibiotic that enters pancreatic β -cells via the glucose transporter (GLUT2) and induces DNA methylation, leading to β -cell apoptosis. It is toxic to insulin-producing cells and commonly used to establish diabetic animal models. This product is unstable in solution and is recommended to be prepared freshly before use.
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

A DRUG SCREENING EXPERT

Cell Research	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 IC ₅₀ values (drug concentration that induces 50% inhibition of the cell growth) are calculated using the GraphPad Prism 4 program[2].
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Solubility Information

Solubility	H ₂ O: 113.3 mg/mL (427.19 mM), Sonication and heating are recommended. DMSO: 16.67 mg/mL (62.85 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.

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

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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