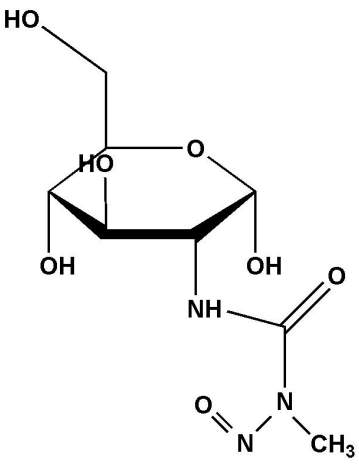
Streptozocin

Product description

Streptozocin (STZ) is an antibiotic produced by Streptomyces Aureobasidium pullulans. It has anti-tumor effects and is often used to treat pancreatic cancer. At the same time, STZ can selectively destroy pancreatic beta cells in certain species of animals and induce diabetes. It can be used for modeling research on diabetes models. Rats and mice are generally used to create animal models. The preparation of type Ⅰ diabetes and type Ⅱ diabetes animal models is related to the dose of STZ injection: when a high dose is injected, it can directly cause extensive destruction of pancreatic islet β cells, which can cause a type Ⅰ diabetes model; when a smaller amount of STZ is injected, it only destroys the function of a part of the pancreatic islet β cells, causing peripheral tissues to be insensitive to insulin. At the same time, high-calorie feed is given. The combination of the two can induce an animal model with pathological and physiological changes close to human type Ⅱ diabetes. Generally speaking, high doses of STZ can induce type I diabetes models, while low doses of STZ plus high-fat and high-sugar feed can induce type II diabetes models.

In addition, STZ has also been widely studied in anti-leukemia, DNA methylation, anti-nephritis and other aspects.

Specifications

English Synonym	Streptozotocin
CAS NO.	18883-66-4
Formula	$C_8H_{15}N_3O_7$
Molecular Weight	265.22
Appearance	White or light yellow powder
Purity	⩾98%
Solubility	Soluble in water, lower alcohols, ketones, etc.
Structure	

Components

Components No.	C331605E	C331605S	C331605M
Size	100 mg	500 mg	1 g

Storage

Ice pack shipping. -15°C ~-25°C storage, away from moisture and light, valid for 2 years.

Notes

1. STZ is easy to deliquesce and is unstable when exposed to moisture. If repeated sampling and weighing is required, long-term exposure should be avoided to prevent it from being exposed to moisture. It will expire 30 minutes after being exposed to moisture. This is consistent with the requirement for rapid injection during modeling, that is, its aqueous solution is unstable. If multiple weighings are required, operation and storage must be strictly carried out in accordance with the principle of avoiding moisture.
2. The operating environment, containers, and dispensing tools must be kept dry.
3. STZ injection is ready for use and should only be prepared before injection because the STZ aqueous solution is extremely unstable.
4. For your safety and health, please wear a lab coat and disposable gloves.
5. For research use only.

Instructions

Taking the diabetes model as an example to illustrate the use of STZ

1. Prepare citrate buffer solution

Buffer A: Weigh 2.1 g of citric acid (MW: 210.14) and add 100 mL of double-distilled water to prepare buffer A.

Buffer B: Add 2.94 g of sodium citrate (MW: 294.10) to 100 mL of double-distilled water to prepare buffer B.

Mix buffer A and buffer B in a certain ratio (1:1.32 or 1:1), measure the pH value, and adjust the pH to a range of 4.2~4.5, which is the citric acid buffer required to prepare STZ.

2. Preparation before injection

Before preparing STZ injection, STZ is placed in a dry sterilized bottle, wrapped in tin foil, placed in an ice bath with citric acid buffer to pre-cool, and brought to the animal room for later use.

3. Preparation of injection solution

Rats were weighed after fasting overnight. Group the rats so that STZ is dissolved according to the group. Use citrate buffer to prepare 1% STZ injection based on fasting body weight. If you are not

skilled in subsequent injection operations, be careful not to dissolve STZ all at once. Note: STZ is easy to deactivate. After rapid weighing, STZ still needs to be dry and protected from light. It is recommended to use dry aluminum foil (or tin foil) paper.

4. Injection

Intraperitoneal injection or tail vein injection should be performed alternatively in two groups within 30 minutes if the injection technique is not proficient. 【Note】Most injections require rapid injection.