Dexamethasone Solution (1 M)

Cat. No.: PB180607

Size: 1mL

General Information

Product Form	Liquid
Solvent	DMSO
Concentration	1 mol/L
Storage	-5~-20°C
Whether to avoid light	Shading light
Shipping	Ice bag
Expiration date	12 months

Background

Dexamethasone (DEX) is a highly potent synthetic glucocorticoid receptor agonist with extensive biological functions. As both an apoptosis inducer and a commonly used inducer in experimental animal disease models, DEX can be used to construct a variety of disease models such as muscular dystrophy, hypertension and depression. Its mechanism of action includes inhibiting the production of inflammatory miRNA-155 exosomes in macrophages and significantly reducing the expression of inflammatory factors in neutrophils and monocytes. In addition, DEX acts as an interleukin receptor modulator and exhibits potent anti-inflammatory, antitoxin, anti-allergic and immunosuppressive effects.

In the field of organoid culture, dexamethasone is often used in combination with other key factors (e.g., hepatocyte growth factor HGF and epidermal growth factor EGF) to optimize culture conditions by regulating multiple transcription factors. For example, in liver organoid culture, the combination of DEX with HGF and EGF not only promoted the separation of hepatocytes and bile duct lineages, but also induced the formation of bile duct epithelium on the surface of the organoids, which significantly improved the functionality and structural integrity of the organoids.

Usage Instructions

Before the experiment, the compound must be diluted at least 10-fold with DMSO (100%) to prepare a 100 mM Below stock solution (diluted in the ratio of 1:10: e.g. 1 mL of this product + 9 mL of DMSO), and then the stock solution can be continue diluted downward with the culture medium to reach your desired working concentration.

[Note]:

The solubility of dexamethasone varies significantly depending on the solvent type. It exhibits high solu bility in DMSO and ethanol , but very low solubility in water.

This product is a high-concentrated dexamethasone solution dissolved in pure DMSO. Direct dilution in to aqueous solutions may cause dexamethasone to precipitate due to supersaturation.

Additionally, DMSO at concentrations below 0.1% (1‰) typically does not induce cytotoxicity. Therefore, when adding DMSO-dissolved reagents to cell culture medium, ensure that the stock concentration of the active component is at least 1000-folds the final working concentration, otherwise it may cause

significant damage to the cells.
By following our recommended protocol, you can solve the above problem.

Notes

1. This product is only used for scientific research or further research, not for diagnosis and treatment.
2. This product was sterilized by 0.1 μm filtration and can be used directly after melting.
3. It is necessary to pay attention to the aseptic operation and avoid the contamination.
4. Before using, the product should be thawed at 2-8°C and shaken thoroughly; repeated freeze-thaw cycles are not advised.
5. If precipitation happens after thawing, the contents can be resuspended by pipetting or vortex mixing. After incubating the solution at 37°C for 20 to 30 minutes or letting it stand at room temperature for about an hour, check to see if the precipitate dissolves as intended. If the product dissolves completely, it can be used as usual.
6. This product is a concentrated solution and should be diluted prior to use as required.
7. The product should be used within a month if stored regularly at 2-8°C Keep in a frozen state at -5~-20°C for extended storage. Long-term storage at room temperature or between 2-8°C is not recommended. When lesser amounts are required, aliquoting is advised to prevent repeated freeze-thaw cycles.
8. May cause harm to fertility or fetus. Please take relevant precautions when operating.

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