

Small Molecules

Doxycycline

Antibiotic; Used in Tet-inducible gene expression systems

Catalog # 72742

1 g



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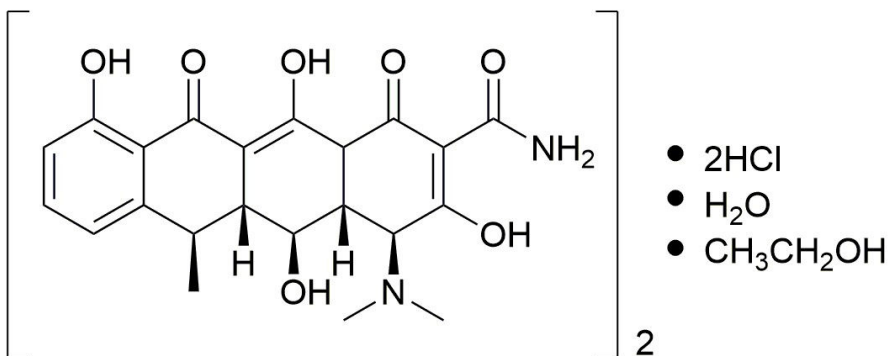
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Product Description

Doxycycline is a tetracycline-like antibiotic (Hicks et al.; Nau et al.; Solís García del Pozo & Solera; Steinhardt et al.). In genetic engineering, doxycycline is used as the regulator for inducible gene expression systems, whereby expression depends on either the presence (Tet-On) or absence (Tet-Off) of doxycycline (Gould et al.; Li et al.). Also, doxycycline inhibits certain matrix metalloproteinases (MMP), such as MMP-8 (Ki = 36 μM; Griffin et al.; Smith et al.). It only poorly inhibits MMP-1 and MMP-13 (Ki > 100 μM; Smith et al.). This product is supplied as the hyclate salt of the molecule.

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| Molecular Name: | Doxycycline (Hyclate) |
| Alternative Names: | WC 2031 |
| CAS Number: | 24390-14-5 |
| Chemical Formula: | 2[C ₂₂ H ₂₄ N ₂ O ₈] · 2HCl · H ₂ O · C ₂ H ₆ O |
| Molecular Weight: | 1025.9 g/mol |
| Purity: | ≥ 98% |
| Chemical Name: | (4S,4aR,5S,5aR,6R,12aR)4(dimethylamino)-1,5,10,11,12a-pentahydroxy-6-methyl-3,12-dioxo-4a,5,5a,6-tetrahydro-4H-tetracene-2-carboxamide;ethanol;hydrate;hydrochloride |

Structure:



Properties

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|----------------------|--|
| Physical Appearance: | A crystalline solid |
| Storage: | Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt. |
| Solubility: | · PBS (pH 7.2) ≤ 2.9 mM · DMSO ≤ 1.0 mM For example, to prepare a 2 mM stock solution in PBS, resuspend 1 g in 490 mL of PBS (pH 7.2). |

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

CELL LINE DEVELOPMENT

· Used as the regulator for inducible gene expression in lentiviral infection and transgenic mouse models using the Tet-On or Tet-Off systems (Brambrink et al.; Carey et al.; Haenebalcke et al.; Hanna et al.; Hockemeyer et al.; Maherali et al.; Markoulaki et al.; Stadtfeld et al. 2008, 2010; Wernig et al.).

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