

Small Molecules

Doxycycline (Hyclate)

Antibiotic; Used in Tet-inducible gene expression systems

Catalog # 72742
100-1047

1 g
10 g



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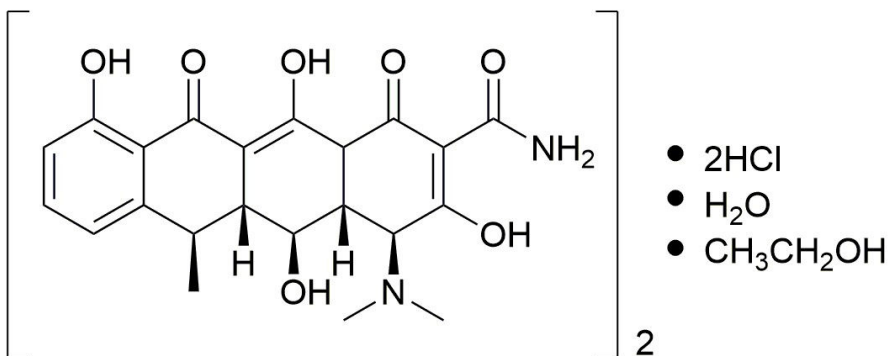
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Product Description

Doxycycline is a tetracycline-like antibiotic (Hicks et al.; Nau et al.; Solís García del Pozo & Solera; Steinhart 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 (K_i = 36 μM; Griffin et al.; Smith et al.). It only poorly inhibits MMP-1 and MMP-13 (K_i > 100 μM; Smith et al.). This product is supplied as the hyclate salt of the molecule.

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

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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