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DATASHEET

Doxycycline hyclate

Product overview

Name	Doxycycline hyclate
Cat No	HB4608
Alternative names	DOX
Applications	Antineoplastic Agent
Purity	>95%
Customer comments	*I received and used your DOX to induce Tet-driven expression of fluorescent protein in neuronal primary cultures. There was no evident toxicity in higher concentrations than usual.* **Verified customer, Uni Marburg**
Description	Broad-spectrum antibiotic. Used in inducible Tet-on/ Tet-off gene expression systems for gene editing.

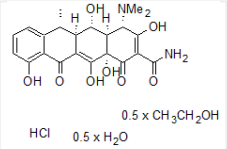
Biological Data

Biological description	Broad-spectrum antibiotic. Tetracycline analog. Also acts as a matrix metalloprotease (MMP) inhibitor. Commonly used in the inducible Tet-on/ Tet-off gene expression system to control transcription. Recently used to develop a doxycycline-inducible, viral mediated CRISPR/Cas9 system.

Solubility & Handling

Storage instructions	+4°C
Solubility overview	Soluble in DMSO (100 mM) and water (100 mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	(4S,4aR,5S,5aR,6R,12aS)-4-(Dimethylamino)- 3,5,10,12,12a-pentahydroxy- 6-methyl- 1,11-dioxo- 1,4,4a,5,5a,6,11,12a-octahydrotetracene- 2-carboxamide hydrochloride hemiethanolate hemihydrate
Molecular Weight	512.94
Chemical structure	
Molecular Formula	$C_{22}H_{24}N_2O_8.HCl.0.5H_2O.0.5C_2H_6O$
CAS Number	24390-14-5
PubChem identifier	54686898
SMILES	CCO.C[C@@H]1[C@H]2[C@@H]([C@H]3[C@@H](C(=O)C(=C([C@]3(C(=O)C2=C(C4=C1C=CC=C4O)O)O)O)C(=O)N)N(C)C)O.Cl
InChi	InChI=1S/2C22H24N2O8.C2H6O.2ClH.H2O/c2*1-7-8-5-4-6-9(25)11(8)16(26)12-10(7)17(27)14-15(24(2)3)18(28)13(21(23)31)20(30)22(14,32)19(12)29;1-2-3;;;/h2*4-7,10,14-15,17,25-27,30,32H,1-3H3,(H2,23,31);3H,2H2,1H3;2*1H;1H2/t2*7-,10+,14+,15-,17-,22-;;;;/m00..../s1

InChiKey	OJMDBNRHBLXJLF-LJTDZVLQSA-N
MDL number	MFCD07357237
Appearance	Pale yellow to yellow

References

The Development of a Viral Mediated CRISPR/Cas9 System with Doxycycline Dependent gRNA Expression for Inducible In vitro and In vivo Genome Editing.

de Solis et al (201 6) Front. Cell. Neurosci. 18
PubMedID 27587996

Doxycycline inhibits MMPs via modulation of plasminogen activators in focal cerebral ischemia.

Burggraf et al (2007) Neurobiol Dis 25(3)
PubMedID 17166729

Inducible in vivo genome editing with CRISPR-Cas9.

Dow et al (2015) Nat Biotechnol 33(4)
PubMedID 25690852