

Small Molecules

Doxorubicin

Anthracycline antibiotic; Inhibits DNA topoisomerase II

Catalog #100-0558
100-0559

5 mg
25 mg



Scientists Helping Scientists™ | WWW.STEMCELL.COM

TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

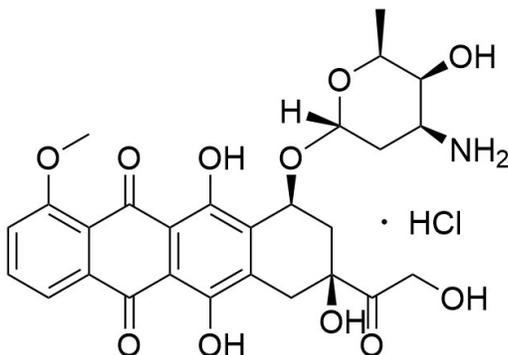
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

Doxorubicin is an anthracycline antibiotic that intercalates DNA and inhibits DNA topoisomerase II (BurrIDGE et al.; Lorenzo et al.). Doxorubicin exhibits cardiotoxic effects that involve generating reactive oxygen species, inhibiting DNA topoisomerase II, and releasing calcium in the sarcoplasmic reticulum (BurrIDGE et al.). This product is supplied as the hydrochloride salt of the molecule.

Molecular Name:	Doxorubicin (Hydrochloride)
Alternative Names:	DOX
CAS Number:	25316-40-9
Chemical Formula:	C ₂₇ H ₂₉ NO ₁₁ • HCl
Molecular Weight:	580.0 g/mol
Purity:	≥ 98%
Chemical Name:	(8S,10S)-10-[(3-amino-2,3,6-trideoxy-α-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-8-(2-hydroxyacetyl)-1-methoxy-5,12-naphthacenedione, monohydrochloride

Structure:



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	<ul style="list-style-type: none">• DMSO ≤ 17 mM• Absolute ethanol ≤ 1.7 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 172 μL of DMSO.

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.

Compound has low solubility in aqueous media. 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

CANCER RESEARCH

- Induces apoptosis in human endothelial cells (Lorenzo et al.).

References

Burrige PW et al. (2016) Human induced pluripotent stem cell-derived cardiomyocytes recapitulate the predilection of breast cancer patients to doxorubicin-induced cardiotoxicity. *Nat Med* 22(5): 547–56.

Lorenzo E et al. (2002) Doxorubicin induces apoptosis and CD95 gene expression in human primary endothelial cells through a p53-dependent mechanism. *J Biol Chem* 277(13): 10883–92.

Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).

PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2021 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.