



SZABO SCANDIC

Part of Europa Biosite

Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!



Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

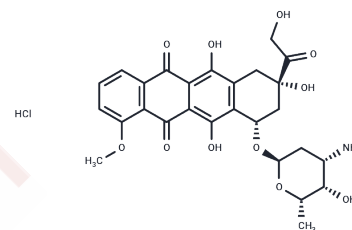
www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

Doxorubicin hydrochloride

Chemical Properties

CAS No. :	25316-40-9
Formula:	C ₂₇ H ₂₉ NO ₁₁ ·HCl
Molecular Weight:	579.99
Appearance:	no data available
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year



Biological Description

Description	Doxorubicin hydrochloride (Adriamycin) belongs to the anthracycline class of antibiotics and is an inhibitor of human DNA topoisomerase I/II (IC ₅₀ =0.8/2.67 μM). Doxorubicin hydrochloride exhibits cytotoxicity and antitumor activity. Doxorubicin hydrochloride reduces the phosphorylation of AMPK and its downstream target protein acetyl coenzyme A carboxylase, and induces apoptosis and autophagy.
Targets(IC ₅₀)	Apoptosis, Mitophagy, HBV, HIV Protease, Topoisomerase, Antibacterial, Antibiotic, AMPK, Autophagy, ADC Cytotoxin
In vitro	<p>METHODS: Human breast cancer cells MCF10A, BT474, MCF-7 and T47D were treated with Doxorubicin hydrochloride (0.1-10 μM) for 48 h, and cell growth inhibition was detected by MTT.</p> <p>RESULTS: Doxorubicin hydrochloride dose-dependently inhibited the growth of MCF10A, BT474, MCF-7 and T47D cells with IC₅₀s of 2.51 μM, 1.14 μM, 0.69 μM and 8.53 μM, respectively. [1]</p> <p>METHODS: Bovine aortic endothelial cells BAECs and human ovarian teratoma cells PA-1 were treated with Doxorubicin (0.5 μM) for 1-16 h. Apoptosis was detected by Flow Cytometry, and caspase-3 activity was detected by caspase-3 assay kit.</p> <p>RESULTS: Doxorubicin induced apoptosis and caspase-3 activation in BAECs and PA-1 cells in a time-dependent manner. [2]</p> <p>METHODS: Canine breast cancer cells CIPp were treated with Doxorubicin (EC₅₀(20h) =12.08 μM) for 3-48 h. The expression of target genes was detected by qRT-PCR.</p> <p>RESULTS: Doxorubicin induced up-regulation of the mRNA expression levels of multidrug resistance (MDR)-related genes P-gp and BCRP. [3]</p>
In vivo	<p>METHODS: To detect antitumor activity in vivo, Doxorubicin hydrochloride (1 mg/kg/4 days) and lovastatin (5 mg/kg/day) were intraperitoneally injected into B6D2F1 mice bearing murine melanoma tumor B16F10 for two weeks.</p> <p>RESULTS: The combination of Doxorubicin hydrochloride and lovastatin showed a significant increase in sensitivity compared to either drug alone. lovastatin enhanced the antitumor activity of Doxorubicin hydrochloride. [4]</p> <p>METHODS: To investigate the acute and long-term cognitive deficits of Doxorubicin in cancer patients, a single dose of Doxorubicin hydrochloride (25 mg/kg) was administered intraperitoneally to B6C3F1J mice.</p> <p>RESULTS: Systemic treatment with Doxorubicin hydrochloride altered glutamatergic neurotransmission in the nucleus of key cells associated with cognitive function within 24 h. There were no lasting effects on spatial learning and memory. [5]</p>

Cell Research	To analyze the effect of Bcl-2 expression on the viability of HUVECs treated with Dox, cells were co-transfected with 200 ng of the pEGFP-spectrin expression plasmid together with 200 ng of either pCDNA3-hBcl-2 or the control pCMV β -galactosidase expression vector (33). The pGL3 Basic vector (2.1 μ g) was added as a DNA carrier in a total volume of 0.140 ml, and transfection was performed by the calcium phosphate procedure in 35-mm tissue culture dishes. After treatment, the cells were washed with PBS, fixed with 3.7% formaldehyde for 15 min, and washed for a further 10 min with 50 mM NH ₄ Cl blocking solution in PBS. Cells were then washed with PBS, permeabilized with a 0.1% Triton X-100 for 10 min, washed again with PBS, and stained with 1 μ g/ml 4',6-diamidino-2-phenyl-indole solution for 2 min. The cells were examined under a fluorescence microscope, and GFP-positive cells were scored after counting a minimum of 1000 total cells for each condition. The efficiency of transfection in Bcl-2- and β -galactosidase-expressing cells, determined in aliquots of transfected cells just before the addition of Dox, was similar (10–12%) [1].
Animal Research	Athyimic male nude mice (3-4 weeks old) are used. PC3 cells (4 \times 10 ⁶) are injected subcutaneously into the flanks of mice. Animals bearing tumors are randomly assigned to treatment groups (five or six mice per group) and treatment initiated when xenografts reached volumes of about 100 mm ³ . Tumors are measured using digital calipers and volume calculated using the formula: Volume=Width ² \times Length \times 0.52, where width represents the shorter dimension of the tumor. Treatments are administered as indicated using vehicle (PBS containing 0.1% BSA), Doxorubicin (2-8 mg/kg), Apo2L/TRAIL (500 μ g/animal), or a combination of 4 mg/kg Doxorubicin followed by 500 μ g Apo2L/TRAIL. Doxorubicin is administered systemically whereas Apo2L/TRAIL is given either intratumorally or systemically. All treatments are given once. Mice are monitored daily for signs of adverse effects (listlessness and scruffy appearance). Treatments seemed to be well tolerated. The mean \pm SEM is calculated for each data point. Differences between treatment groups are analyzed by the student t-test. Differences are considered significant when P<0.05 [3]. Altogether, 29 male Wistar rats (weight 306 \pm 18.6 g) were used in the study. Animals were divided into three groups: control (group C; n = 10; 306.4 \pm 17.2 g), animals treated with DOX (group DOX; n = 10; 305.0 \pm 24.9 g) and animals treated with L-DOX (group L-DOX; n = 9; 306.7 \pm 15.0 g). Vehiculum (aqua pro injection), DOX and L-DOX were applied to group C, DOX and L-DOX, respectively, by single intraperitoneal injection; concentration of both DOX and L-DOX was 5 mg/kg, similar to the concentrations used in human treatment protocols. All animals were sacrificed 24 h after drug application. Thoracotomy was performed, hearts were excised and samples were obtained separately from the free wall of the left atrium (LA), left ventricle (LV), right atrium (RA) and right ventricle (RV). Samples were placed into RNA later preservation solution and stored at -80 C until further analysis [4].

Solubility Information

Solubility	DMSO: 55 mg/mL (94.83 mM), H ₂ O: 29 mg/mL (50 mM), (< 1 mg/ml refers to the product slightly soluble or insoluble)
------------	--

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7242 mL	8.6208 mL	17.2417 mL
5 mM	0.3448 mL	1.7242 mL	3.4483 mL
10 mM	0.1724 mL	0.8621 mL	1.7242 mL
50 mM	0.0345 mL	0.1724 mL	0.3448 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Wen SH, et al. Sulbactam-enhanced cytotoxicity of doxorubicin in breast cancer cells. *Cancer Cell Int.* 2018 Sep 4; 18:128.
Wang B, Jin Y, Liu J, et al. EP1 activation inhibits doxorubicin-cardiomyocyte ferroptosis via Nrf2.Redox

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:36 Washington Street,Wellesley Hills,MA 02481