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#### Documents

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**44583** ▶ **Sigma-Aldrich.**

## Doxorubicin hydrochloride

★★★★★ (0)

suitable for fluorescence, 98.0-102.0% (HPLC)

#### Synonyme(s):

DOX, Hydroxydaunorubicin hydrochloride

#### Empirical Formula (Hill Notation):

C<sub>27</sub>H<sub>29</sub>NO<sub>11</sub> · HCl

Numéro CAS: **25316-40-9**

Poids moléculaire: 579.98

Beilstein: 4229251

Numéro EC: **246-818-3**

Numéro MDL: **MFCD00077757**

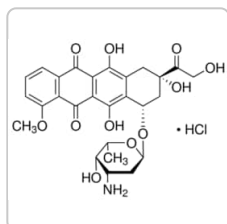
ID de substance PubChem: **57650234**

| Référence  | Conditionnement | Disponibilité                                   |                            | Prix      | Quantité                                                      |                   |
|------------|-----------------|-------------------------------------------------|----------------------------|-----------|---------------------------------------------------------------|-------------------|
| 44583-1MG  | 1 MG            | ✓ Disponible pour expédition le 05 octobre 2022 | <a href="#">Détails...</a> | 70,90 €   | <input type="text" value="-"/> <input type="text" value="+"/> | <a href="#">i</a> |
| 44583-10MG | 10 MG           | ✓ Only 2 left in stock (more on the way)        | <a href="#">Détails...</a> | 430,00 €  | <input type="text" value="-"/> <input type="text" value="+"/> | <a href="#">i</a> |
| 44583-50MG | 50 MG           | ✓ Disponible pour expédition le 05 octobre 2022 | <a href="#">Détails...</a> | 1490,00 € | <input type="text" value="-"/> <input type="text" value="+"/> | <a href="#">i</a> |

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## PRODUITS RECOMMANDÉS



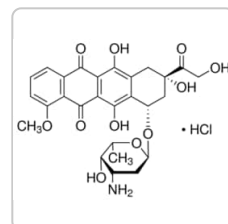
Sigma-Aldrich

**D1515**

**Doxorubicin hydrochloride**

98.0-102.0% (HPLC)

[Consulter le prix et la disponibilité](#)



Supelco

**PHR1789**

**Doxorubicin Hydrochloride**

Pharmaceutical Secondary Standard; Certified Reference Material

[Consulter le prix et la disponibilité](#)

## PROPRIÉTÉS

|                   |                      |
|-------------------|----------------------|
| Source biologique | synthetic            |
| Niveau de qualité | 200                  |
| Essai/Dosage      | 98.0-102.0% (HPLC)   |
| Forme             | solid                |
| Couleur           | orange to dark red   |
| Pf                | 216 °C (dec.) (lit.) |

|                                      |                                                                                                                                                                                                                                       |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Solubilité                           | H <sub>2</sub> O: 50 mg/mL, clear, orange to red                                                                                                                                                                                      |
|                                      | DMSO: soluble                                                                                                                                                                                                                         |
|                                      | THF: soluble                                                                                                                                                                                                                          |
|                                      | ethanol: soluble                                                                                                                                                                                                                      |
|                                      | methanol: soluble                                                                                                                                                                                                                     |
| Fluorescence                         | $\lambda_{\text{ex}}$ 470 nm; $\lambda_{\text{em}}$ 585 nm in ethanol                                                                                                                                                                 |
| Adéquation                           | suitable for fluorescence                                                                                                                                                                                                             |
| Spectre d'activité de l'antibiotique | neoplastics                                                                                                                                                                                                                           |
| Mode d'action                        | DNA synthesis   interferes<br>enzyme   inhibits                                                                                                                                                                                       |
| Temp. de stockage                    | 2-8°C                                                                                                                                                                                                                                 |
| SMILES string                        | <chem>Cl[H].COc1cccc2C(=O)c3c(O)c4C[C@](O)(C[C@H](O[C@H]5C[C@H](N)[C@H](O)[C@H](C)O5)c4c(O)c3C(=O)c12)C(=O)CO</chem>                                                                                                                  |
| InChI                                | 1S/C27H29NO11.ClH/c1-10-22(31)13(28)6-17(38-10)39-15-8-27(36,16(30)9-29)7-12-19(15)26(35)21-20(24(12)33)23(32)11-4-3-5-14(37-2)18(11)25(21)34;/h3-5,10,13,15,17,22,29,31,33,35-36H,6-9,28H2,1-2H3;1H/t10-,13-,15-,17-,22+,27-;/m0./s1 |
| InChI key                            | MWWSFMDVAYGXBV-RUELKSSGSA-N                                                                                                                                                                                                           |
| Gene Information                     | human ... <a href="#">TOP2A(7153)</a>                                                                                                                                                                                                 |

Vous recherchez des produits similaires ? Visitez [Guide de comparaison des produits](#)

## Catégories apparentées

## Antibiotics

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### DESCRIPTION

#### Description générale

Chemical structure: tetracycline

#### Application

Doxorubicin was used to induce apoptosis, and to induce cardiotoxicity in SK-N-MC cells . It is used to inhibit macromolecular biosynthesis.

#### Conditionnement

1, 10, 50 mg in glass bottle

Bottomless glass bottle. Contents are inside inserted fused cone.

#### Actions biochimiques/physiologiques

Doxorubicin is an antitumor antibiotic that intercalates DNA and inhibits macromolecular biosynthesis. DNA replication is halted due to the inhibition of topoisomerase II. It is an inhibitor of reverse transcriptase and RNA polymerase and is an immunosuppressive agent .

#### Autres remarques

Keep container tightly closed in a dry and well-ventilated place.

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## INFORMATIONS SUR LA SÉCURITÉ

### Pictograms



GHS07,GHS08

### Mention d'avertissement

Danger

### Mentions de danger

H302 - H340 - H350 - H360FD

### Conseils de prudence

P202 - P264 - P270 - P280 -  
P301 + P312 - P308 + P313

### Classification des risques

Acute Tox. 4 Oral - Carc. 1B -  
Muta. 1B - Repr. 1B

### Code de la classe de stockage

6.1C - Combustible, acute  
toxic Cat.3 / toxic compounds  
or compounds which causing  
chronic effects

### WGK

WGK 3

### Flash Point(F)

Not applicable

### Point d'éclair C

Not applicable

### Équipement de protection individuelle

Eyeshields, Gloves, type P3  
(EN 143) respirator  
cartridges

## DOCUMENTATION

### Certificat d'analyse

Saisir un numéro de lot pour rechercher un certificat d'analyse (COA).

Numéro de lot

e.g. 023J5431

## Comment saisir un numéro de lot (COA)

Rechercher

## Certificat d'origine

Saisir un numéro de lot pour rechercher un certificat d'origine (COO).

Numéro de lot

e.g. 023J5431

## Comment saisir un numéro de lot (COO)

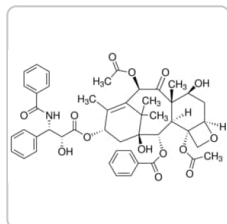
Rechercher

## Plus De Documents

[Structure Search](#)

[FDS](#)

## LES CLIENTS ONT ÉGALEMENT CONSULTÉ

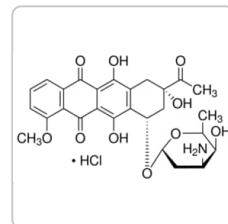


Sigma-Aldrich

**T7402**

**Paclitaxel**

from *Taxus brevifolia*, ≥95% (HPLC), powder



**D0125000**

**Daunorubicin hydrochloride**

European Pharmacopoeia (EP) Reference Standard

[Consulter le prix et la disponibilité](#)[Consulter le prix et la disponibilité](#)

## QUESTIONS FRÉQUEMMENT POSÉES (FAQ)

### Which document(s) contains shelf-life or expiration date information for a given product?

If available for a given product, the recommended re-test date or the expiration date can be found on the Certificate of Analysis.

### How do I get lot-specific information or a Certificate of Analysis?

The lot specific COA document can be found by entering the lot number above under the "Documents" section.

### How do I find price and availability?

There are several ways to find pricing and availability for our products. Once you log onto our website, you will find the price and availability displayed on the product detail page. You can contact any of our Customer Sales and Service offices to receive a quote. USA customers: 1-800-325-3010 or view [local office numbers](#).

### What is the Department of Transportation shipping information for this product?

Transportation information can be found in Section 14 of the product's (M)SDS. To access the shipping information for this material, use the link on the product detail page for the product.

### What is the function of Doxorubicin hydrochloride, Product 44583?

In chemotherapy: "Doxorubicin HCl is the hydrochloride salt of doxorubicin, an anthracycline antibiotic with antineoplastic activity. Doxorubicin, isolated from the bacterium *Streptomyces peucetius* var. *caesius*, is the hydroxylated congener of daunorubicin." -National Cancer Institute.

### At what concentration can Doxorubicin hydrochloride, Product 44583, be dissolved in water? At what concentration in DMSO?

The solubility of Product No. 44583 tested in water (50 mg/mL), yielding a clear orange to red solution. It is also soluble in DMSO (50 mg/mL), ethanol, methanol and tetrahydrofuran.

### How stable is a solution of Doxorubicin hydrochloride, Product 44583?

According to the 11th edition of the chemicals encyclopedia published by the Royal Society of Chemistry, "aqueous solutions are unchanged after one month at 5 °C but unstable at higher temperatures or at either acid or alkaline pH. Several studies cite that stability is related to pH, exposure to light and the medium used for storage. Doxorubicin hydrochloride is subject to light degradation at <0.5 mg/mL, with considerable loss of bioactivity. If stored at 25 °C in the dark in 5% glucose, pH 4.7 (or 3.3% glucose + 0.3% sodium chloride, pH 4.4), solutions were stable (5% or less change) for at least 4 weeks."

### How should I use Product D1515 - Doxorubicin hydrochloride to induce double strand breaks in the DNA of HeLa cells?

We do not test Product D1515 - Doxorubicin hydrochloride for biological activity with HELA cells. The following paper used 100 nM to 250 nM doxorubicin Adam Hermawan, et al., Journal of Natural Remedies, Vol. 12/2 (2012) 108-114 The following paper uses 0.01 to 1.0 mug/ml doxorubicin SH Kim, et al., CANCER RESEARCH 32, 323-325, February 1972

### My question is not addressed here, how can I contact Technical Service for assistance?

Ask a Scientist [here](#).

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## ARTICLES REVUS PAR DES PAIRS

### Effect of adriamycin on DNA, RNA, and protein synthesis in cell-free systems and intact cells.

**R L Momparler et al.**

*Cancer research, 36(8), 2891-2895 (1976-08-01)*

The effect of adriamycin on DNA, RNA, and protein synthesis was investigated in cell-free systems and intact cells. In studies with purified mammalian cell enzymes, adriamycin produced a greater inhibition of DNA-dependent DNA polymerase than of RNA polymerase. The extent

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### Protective role of Nd1 in doxorubicin-induced cardiotoxicity.

**Lisa Fujimura et al.**

*Cardiovascular research, 64(2), 315-321 (2004-10-16)*

The Ndl gene, which encodes a novel kelch family protein, is expressed ubiquitously in mouse tissues. In vitro studies suggest that Ndl protein, which binds to actin filaments, functions as a cytoskeletal stabilizer. In order to elucidate a physiological function

### Bioactive guaianolides from siyekucai (*Ixeris chinensis*).

**Shujun Zhang et al.**

*Journal of natural products*, 69(10), 1425-1428 (2006-10-28)

Two new guaianolides, named chinensiolides D (5) and E (6), were isolated from *Ixeris chinensis* Nakai, and their structures were determined to be 10alpha-hydroxy-3-oxoguaia-11(13)-eno-12,6alpha-lactone (5) and 10alpha-hydroxy-3beta-O-[2,6-di(p-hydroxyphenylacetyl)-beta-glucopyranosyl]guaia-4(15),11(13)-dieno-12,6alpha-lactone (6). The first isolation of (11S)-10alpha-hydroxy-3-oxoguaia-4-eno-12,6alpha-lactone (4) from natural sources and its characterization

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### RET activation inhibits doxorubicin-induced apoptosis in SK-N-MC cells.

**Michael A Skinner et al.**

*Anticancer research*, 28(4B), 2019-2025 (2008-08-30)

Medullary thyroid cancer (MTC) is generally resistant to chemotherapy and the frequent constitutive activation of RET (rearranged during transfection gene) in these tumors might inhibit drug-induced apoptosis. Each RET isoform was separately expressed in SK-N-MC cells (neural crest-derived tumor) and

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### Topotecan, pegylated liposomal doxorubicin hydrochloride and paclitaxel for second-line or subsequent treatment of advanced ovarian cancer: a systematic review and economic evaluation.

**C Main et al.**

*Health technology assessment (Winchester, England)*, 10(9), 1-132 (2006-03-21)

To examine the clinical effectiveness and cost-effectiveness of intravenous formulations of topotecan monotherapy, pegylated liposomal doxorubicin hydrochloride (PLDH) monotherapy and paclitaxel used alone or in combination with a platinum-based compound for the second-line or subsequent treatment of advanced ovarian cancer.

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### Afficher tous les articles scientifiques apparentés

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## PROTOCOLES ET ARTICLES SCIENTIFIQUES

### Articles

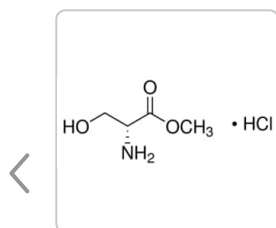
## Inhibition of Nucleic Acid Synthesis by Antibiotics

Quinolones are a key group of antibiotics that interfere with DNA synthesis by inhibiting topoisomerase, most frequently topoisomerase II (DNA gyrase), an enzyme involved in DNA replication.

## Applications of Graphene Oxide and Reduced Graphene Oxide

Graphene oxide is a unique material that can be viewed as a single monomolecular layer of graphite with various oxygen containing functionalities such as epoxide, carbonyl, carboxyl and hydroxyl groups.

## PRODUITS CONSULTÉS RÉCEMMENT



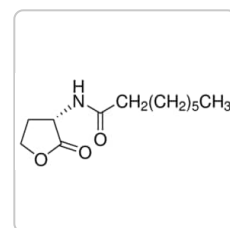
Sigma-Aldrich

**445797**

**D-Serine methyl ester hydrochloride**

98%

[Consulter le prix et la disponibilité](#)



Sigma-Aldrich

**44558**

**N-Octanoyl-L-homoserine lactone**

≥96% (HPLC)

[Consulter le prix et la disponibilité](#)

## Évaluations

★★★★★

[Soyez le premier à donner votre avis sur ce produit](#)

# Questions

Soyez le premier à poser une question

## SERVICE TECHNIQUE

Notre équipe de scientifiques dispose d'une expérience dans tous les secteurs de la recherche, notamment en sciences de la vie, science des matériaux, synthèse chimique, chromatographie, analyse et dans de nombreux autres domaines..

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