Revision 3

Store at -20C

#5927

Doxorubicin

5 mg

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Background

Doxorubicin, an anthracycline antibiotic, inhibits DNA and RNA synthesis in mammalian cells and has been shown to be a very effective anti-tumor agent (1,2). Doxorubicin binds to nucleic acids by intercalating the DNA double helix and stabilizing topoisomerase II cleavage complexes, leading to DNA strand breaks at specific doxorubicin-induced sites (3). Doxorubin has been shown to inhibit DNA synthesis in a dose-dependent manner in MCF7 cells, which corresponds closely with growth inhibition (4). Researchers have also demonstrated that doxorubicin effectively inhibits human DNA topoisomerase I (5).

Molecular Formula

$C_{27}H_{29}NO_{11}$ • HCl

Molecular Weight

579.98 g/mol

Purity

>99%

CAS

25316-40-9

Solubility

Soluble in DMSO at 100mg/ml and H2O at 10mg/ml.

Storage

Store lyophilized or in solution at -20ºC, desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use:

Doxorubicin is supplied as a lyophilized powder. For a 10 mM stock, reconstitute the 5 mg in 860 µl DMSO. Working concentrations and length of treatments vary depending on the desired effect, but it is typically used at 0.1-5 µM for 12-24 hours. Soluble in DMSO at 100 mg/ml; very poorly soluble in ethanol; soluble in water at 10 mg/ml with slight warming.

Background References

1. Kim, S.H. and Kim, J.H. (1972) *Cancer Res* 32, 323-5.
2. Momparler, R.L. et al. (1976) *Cancer Res* 36, 2891-5.
3. Capranico, G. et al. (1990) *Nucleic Acids Res* 18, 6611-9.
4. Fornari, F.A. et al. (1994) *Mol Pharmacol* 45, 649-56.
5. Foglesong, P.D. et al. (1992) *Cancer Chemother Pharmacol* 30, 123-5.

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

Trademarks and Patents

Limited Uses

engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.