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## Product Data Sheet

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Product Name: Deoxynyboquinone

Cat. No.: GC68306

### Chemical Properties

Cas. No. 96748-86-6

Formula  $C_{15}H_{12}N_2O_4$

M.Wt 284.27

Solubility DMSO : 4 mg/mL (14.07 mM; ultrasonic and warming and heat to 60°C)

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

### Background

Deoxynyboquinone, an excellent **NQO1** substrate, is a potent antineoplastic agent. Deoxynyboquinone induces **Apoptosis** in cancer cell lines. Deoxynyboquinone kills cancer cells through oxidative stress and reactive oxygen species (ROS) formation<sup>[1][2][3]</sup>.

Deoxynyboquinone (DNQ; 72h) potently induces the death of cancer cells (SK-MEL-5, MCF-7, HL-60, HL-60/ADR) in culture, with IC<sub>50</sub> values between 16 and 210 nM<sup>[2]</sup>. Deoxynyboquinone is still able to induce cancer cell death under hypoxic conditions (HeLa cell; IC<sub>50</sub>: 5.1 μM)<sup>[2]</sup>.

Deoxynyboquinone (group B1; 0.5 μM; 3, 6, 24 hours) potently induces apoptosis in cancer cell lines (MCF-7, HL-60) through cytochrome c release<sup>[3]</sup>.

Deoxynyboquinone (2.5, 5, and 10 mg/kg; every other day for 5 injections; i.v. for day 2-18) shows antitumor efficacy confirmed by overall survival (at 5 mg/kg), at a 6-fold lower dose than β-lapachone (30 mg/kg)<sup>[4]</sup>.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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- [1]. Elizabeth I Parkinson, et al. Deoxynyboquinones as NQO1-Activated Cancer Therapeutics. *Acc Chem Res.* 2015 Oct 20;48(10):2715-23.
- [2]. Joseph S Bair, et al. Chemistry and biology of deoxynyboquinone, a potent inducer of cancer cell death. *J Am Chem Soc.* 2010 Apr 21;132(15):5469-78.
- [3]. Tudor G, et,al. Cytotoxicity and apoptosis of benzoquinones: redox cycling, cytochrome c release, and BAD protein expression. *Biochem Pharmacol.* 2003;65(7):1061-1075.
- [4]. Huang X, et al. An NQO1 substrate with potent antitumor activity that selectively kills by PARP1-induced programmed necrosis. *Cancer Res.* 2012 Jun 15;72(12):3038-47.

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