

# PRODUCT INFORMATION



## Docetaxel Polymeric Nanoparticles

Item No. 39769

### Overview and Properties

<b>Contents:</b>	This vial contains 2 mg of docetaxel contained in TBS-buffered TPGS and poloxanlene polymeric nanoparticles containing trehalose.
<b>Synonyms:</b>	Docetaxel PNPs, Docetaxel Polymer-based Nanoparticles, DTX PNPs, RP 56976 PNPs
<b>Form:</b>	Solid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥3 years
<b>Storage Buffer:</b>	TBS, pH 7.4, when resuspended in 1 ml water

### Description

Docetaxel polymeric nanoparticles (PNPs) are nanoparticles composed of tocopherol (TPGS; Item No. 34661), poloxanlene, trehalose (Item No. 20517), and TBS that encapsulate docetaxel (Item No. 11637) and are 15 to 20 nm in size as determined by dynamic light scattering (DLS). PNP formulations are a lipid-based drug delivery (LBDD) system that improve drug bioavailability and solubility, protect the cargo from degradation or metabolism, control drug release, and help lower the biological impacts observed by DMSO and other organic solvents.<sup>1,2</sup> Docetaxel is a microtubule-stabilizing agent and a semisynthetic derivative of paclitaxel (Item No. 10461).<sup>3</sup> Formulations containing docetaxel have been used in the treatment of head and neck, breast, and non-small cell lung cancer, gastric adenocarcinoma, and castration-resistant prostate cancer.

Before use, reconstitute the docetaxel PNPs in 1 ml of deionized water and dilute the reconstituted docetaxel PNPs prior to performing biological experiments.

### References

1. Zielińska, A., Carreiró, F., Oliveira, A.M., *et al.* Polymeric nanoparticles: Production, characterization, toxicology and ecotoxicology. *Molecules* **25(16)**, 3731 (2020).
2. Begines, B., Ortiz, T., Pérez-Aranda, M., *et al.* Polymeric nanoparticles for drug delivery: Recent developments and future prospects. *Nanomaterials (Basel)* **10(7)**, 1403 (2020).
3. Bissery, M.C., Guenard, D., Gueritte-Voegelein, F., *et al.* Experimental antitumor activity of taxotere (RP 56976, NSC 628503), a taxol analogue. *Cancer Res.* **51(18)**, 4845-4852 (1991).

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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