

[Open Peer Review on Qeios](#)

# Nanoparticle-encapsulated Doxorubicin Hydrochloride

National Cancer Institute

## Source

National Cancer Institute. *Nanoparticle-encapsulated Doxorubicin Hydrochloride*. NCI Thesaurus. Code C102875.

A formulation of nanoparticles encapsulating the hydrochloride salt form of the anthracycline antibiotic doxorubicin, with potential antitumor activity. Upon intravenous administration, doxorubicin intercalates DNA, interferes with the activity of topoisomerase II, and causes DNA adducts and other DNA damage, resulting in tumor cell growth inhibition and apoptosis. This agent also interacts with cell membrane lipids causing lipid peroxidation. Delivery of doxorubicin in nanoparticles may improve drug penetration into tumors and may circumvent the tumor cells multidrug resistance mechanisms and may therefore be effective in chemoresistant tumor cells.