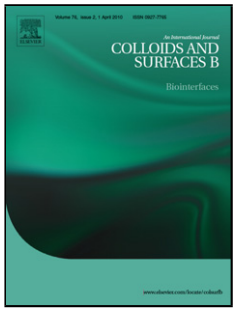

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A robust pH-sensitive unimolecular dendritic nanocarrier that enables targeted anti-cancer drug delivery via GLUT transporters

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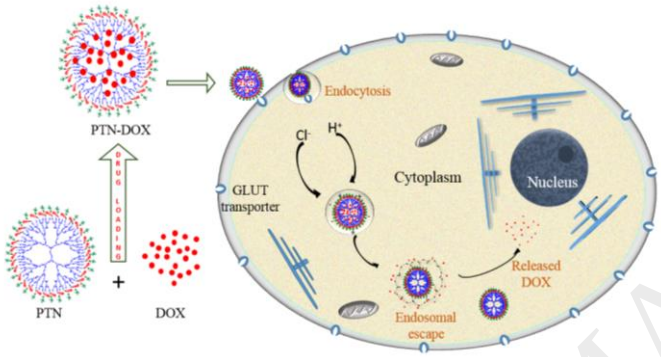
Graphical Abstract



Highlights:

- First report on the synthesis of PAMAM-Tryptophan-(N-acetylglucosamine) [PTN].
- Conjugating tryptophan to dendrimer significantly enhanced drug loading capacity.
- Cytotoxicity of DOX-PTN was significantly higher than DOX-PAMAM.
- Pre-treatment with NAG strongly evidenced GLUT transporters mediated delivery.
- Binding NAG is an attractive tactic for GLUT-mediated delivery of anticancer drugs.

Abstract

This study explores the potential of dendritic unimolecular nanoconstruct, PAMAM-Tryptophan-(N-acetylglucosamine) [PTN] as anti-cancer drug delivery system. The PAMAM dendrimers were modified with L-tryptophan and N-acetyl glucosamine (NAG) for higher drug