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# Squalene-based Nanosystems for Controlled Drug Release

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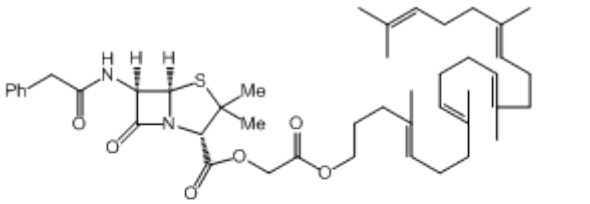
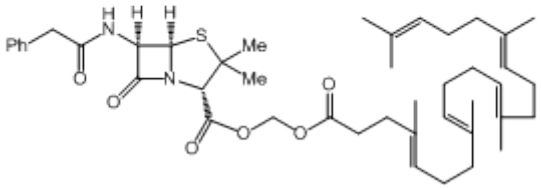
## Graphical Abstract




**11** PNG-SQ with non-sensitive linker




**12** PNG-SQ with sensitive linker

**Abstract:** This article reviews the innovative and original concept the “squalenoylation”, a technology allowing the formulation of a wide range of drug molecules (both hydrophilic and lipophilic) as nanoparticles. The "squalenoylation" approach is based on the covalent linkage between the squalene, a natural and biocompatible lipid belonging to the terpenoid family, and a drug, in order to increase its pharmacological efficacy. Fundamentally, the dynamically folded conformation of squalene triggers the resulting squalene-drug bioconjugates to self-assemble as nanoparticles of 100–300 nm. In general, these nanoparticles showed long blood circulation times after intravenous administration and improved pharmacological activity with reduced side effects and toxicity. This flexible and generic technique opens exciting perspectives in the drug delivery field.

**Keywords:** Squalenoylation, Prodrug, Nanoassemblies, Drug loading, Oncology, Intracellular infections, Neurological disorders

## References

Ref: Curr Top Med Chem 2017, https://www.ncbi.nlm.nih.gov/pubmed/28730957