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Elaboration of polymersomes versus conventional liposomes for improving oral bioavailability of the anticancer flutamide

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Abstract:

Aim: Flutamide is an outstanding anticancer drug with poor oral bioavailability. This is the first work to investigate the potential of polymersomes versus conventional liposomes to improve flutamide bioavailability. Materials & methods: Polymersomes were prepared by solvent-switching technique and successfully optimized with excellent nanometric size (143 nm) and ζ-potential (-33.4 mV). Physicochemical characterization, stability in gastrointestinal tract and in vivo oral pharmacokinetics in male Sprague-Dawely rats were performed. Results: A significantly higher stability in simulated intestinal fluid was demonstrated by polymersomes compared with liposomes. Great improvement in flutamide oral bioavailability in polymersomes compared with both liposomes and drug suspension was obtained. Conclusion: Polymersomes are promising nanoplatforms to overcome stability problems of liposomes and to improve flutamide oral bioavailability. © 2018 2018 Future Medicine Ltd.

Reference:

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