



Lauroyl-gemcitabine-loaded lipid nanocapsule hydrogel for the treatment of glioblastoma

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Mots-cl�s	Lipid nanocapsules; Gemcitabine; Hydrogel; Nanomedicine; Glioblastoma [9]
R�sum� en anglais	<p>The local delivery of chemotherapeutic agents is a very promising strategy for the treatment of glioblastoma (GBM). Gemcitabine is a chemotherapeutic agent that has a different mechanism of action compared to alkylating agents and shows excellent radio-sensitizing properties. So, we developed an injectable gel-like nanodelivery system consisting in lipid nanocapsules loaded with anticancer prodrug lauroyl-gemcitabine (GemC12-LNC) in order to obtain a sustained and local delivery of this drug in the brain. In this study, the GemC12-LNC has been formulated and characterized and the viscoelastic properties of the hydrogel were evaluated after extrusion from 30G needles. This system showed a sustained and prolonged in vitro release of the drug over one month. GemC12 and the GemC12-LNC have shown increased in vitro cytotoxic activity on U-87 MG glioma cells compared to the parent hydrophilic drug. The GemC12-LNC hydrogel reduced significantly the size of a subcutaneous human GBM tumor model compared to the drug and short-term tolerability studies showed that this system is suitable for local treatment in the brain. In conclusion, this proof-of-concept study demonstrated the feasibility, safety and efficiency of the injectable GemC12-LNC hydrogel for the local treatment of GBM.</p>
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- [1] [http://okina.univ-angers.fr/publications?f\[author\]=24415](http://okina.univ-angers.fr/publications?f[author]=24415)
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=10559](http://okina.univ-angers.fr/publications?f[author]=10559)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=24416](http://okina.univ-angers.fr/publications?f[author]=24416)
- [4] <http://okina.univ-angers.fr/m.pitorre/publications>
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- [8] [http://okina.univ-angers.fr/publications?f\[author\]=13355](http://okina.univ-angers.fr/publications?f[author]=13355)
- [9] [http://okina.univ-angers.fr/publications?f\[keyword\]=20690](http://okina.univ-angers.fr/publications?f[keyword]=20690)
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