



## Tumor eradication in rat glioma and bypass of immunosuppressive barriers using internal radiation with (188)Re-lipid nanocapsules

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Auteur	Vanpouille-Box, Claire [1], Lacœuille, Franck [2], Belloche, Camille [3], Lepareur, Nicolas [4], Lemaire, Laurent [5], Le Jeune, Jean-Jacques [6], Benoît, Jean-Pierre [7], Menei, Philippe [8], Couturier, Olivier-François [9], Garcion, Emmanuel [10], Hindré, François [11]
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Résumé en anglais	<p>To date, glioblastoma treatments have only been palliative. In this context, locoregional drug delivery strategies, which allow for blood-brain barrier bypass and reduced systemic toxicity, are of major significance. Recent progress in nanotechnology has led to the development of colloidal carriers of radiopharmaceutics, such as lipid nanocapsules loaded with rhenium-188 (LNC(188)Re-SSS) that are implanted in the brain. In our study, we demonstrated that fractionated internal radiation using LNC(188)Re-SSS triggered remarkable survival responses in a rat orthotopic glioma model (cure rates of 83%). We also highlighted the importance of the radioactivity activity gradient obtained by combining a simple stereotactic injection (SI) with convection-enhanced delivery (CED). We assumed that the immune system played a role in the treatment's efficacy on account of the overproduction of peripheral cytokines, recruitment of immune cells to the tumor site, and memory response in long-term survivor animals. Hence, nanovectorized internal radiation therapy with activity gradients stimulating immune responses may represent a new and interesting alternative for the treatment of solid tumors such as glioblastomas.</p>
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## Liens

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