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Highly efficacious and specific anti-glioma chemotherapy by tandem nanomicelles co-functionalized with brain tumor-targeting and cell-penetrating peptides

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Abstract

Glioma is a highly challenging human malignancy as drugs typically exhibit a low blood-brain barrier (BBB) permeability as well as poor glioma selectivity and penetration. Here, we report that tandem nanomicelles co-functionalized with brain tumor-targeting and cell-penetrating peptides, Angiopep-2 and TAT, enable a highly efficacious and specific anti-glioma chemotherapy. Interestingly, tandem nanomicelles with 20 mol.% Angiopep-2 and 10 mol.% TAT linked via long and short poly(ethylene glycol)s, respectively, while

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