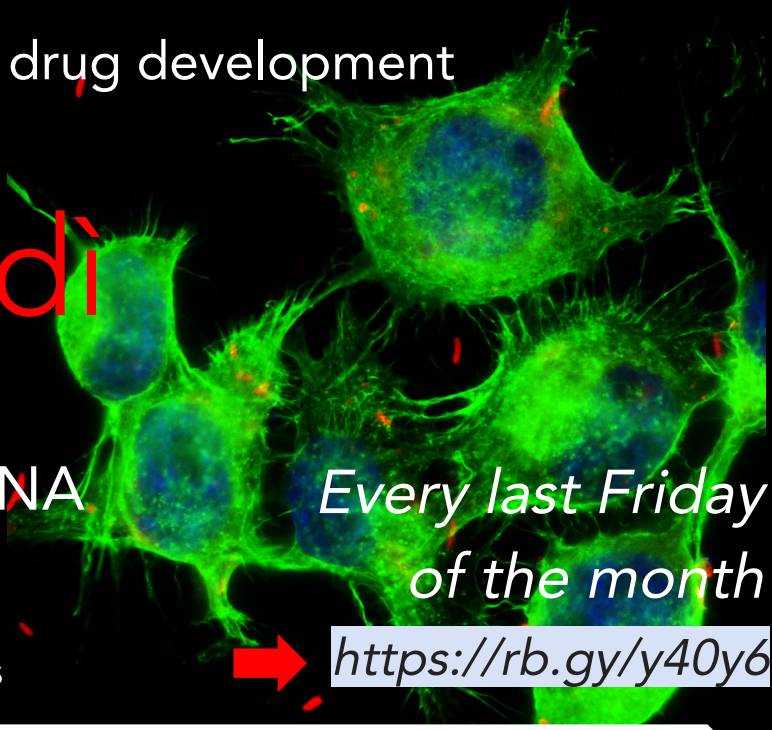
Finanziato dall'Unione europea NextGenerationEU | Ministero dell'Università e della Ricerca | Italiadomani PIANO NAZIONALE DI RIPRESA E RESILIENZA | spoke.6

MUR PNRR National Center for Gene Therapy and Drugs based on RNA Technology

Spoke 6: RNA drug development

veRNAdì



A webinar series about RNA

to share projects and competences, increase networking, discuss issues and new ideas, and disseminate results

Every last Friday of the month

https://rb.gy/y40y6

11th veRNAdì: Friday 20 December 2024, 15:00

Attenuated *Listeria monocytogenes* (Lmat) as delivery platform for anticancer drugs

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Live attenuated bacteria are becoming increasingly significant in cancer immunotherapy, due to their selective accumulation in the tumor microenvironment (TME) and their ability to awaken the host immune system against cancer cells. Despite their ability to kill cancer cells *in vitro*, only a fraction of anticancer drugs can be implemented in clinical practice, because we struggle in finding suitable delivery systems. Within this framework, we are refining a novel strategy that turns attenuated *Listeria monocytogenes* (Lmat) into an intelligent carrier for the selective delivery of anticancer drugs into the TME. Specifically, we engineer the surface of Lmat, so that the drug of choice can be covalently conjugated using a bio-compatible and bio-orthogonal click reaction. We present data about the anticancer activity of Lmat in melanoma models and about Lmat loading with different classes of drugs, including chemotherapeutics and RNA-based drugs. Drug-loaded Lmat is expected to show enhanced anticancer activity, because it allows to combine immunotherapy (Lmat) with targeted therapy (the drug of choice). At the same time, drug-loaded Lmat is expected to minimize side effects, because it is endowed with a built-in delivery system that ensures TME selectivity.