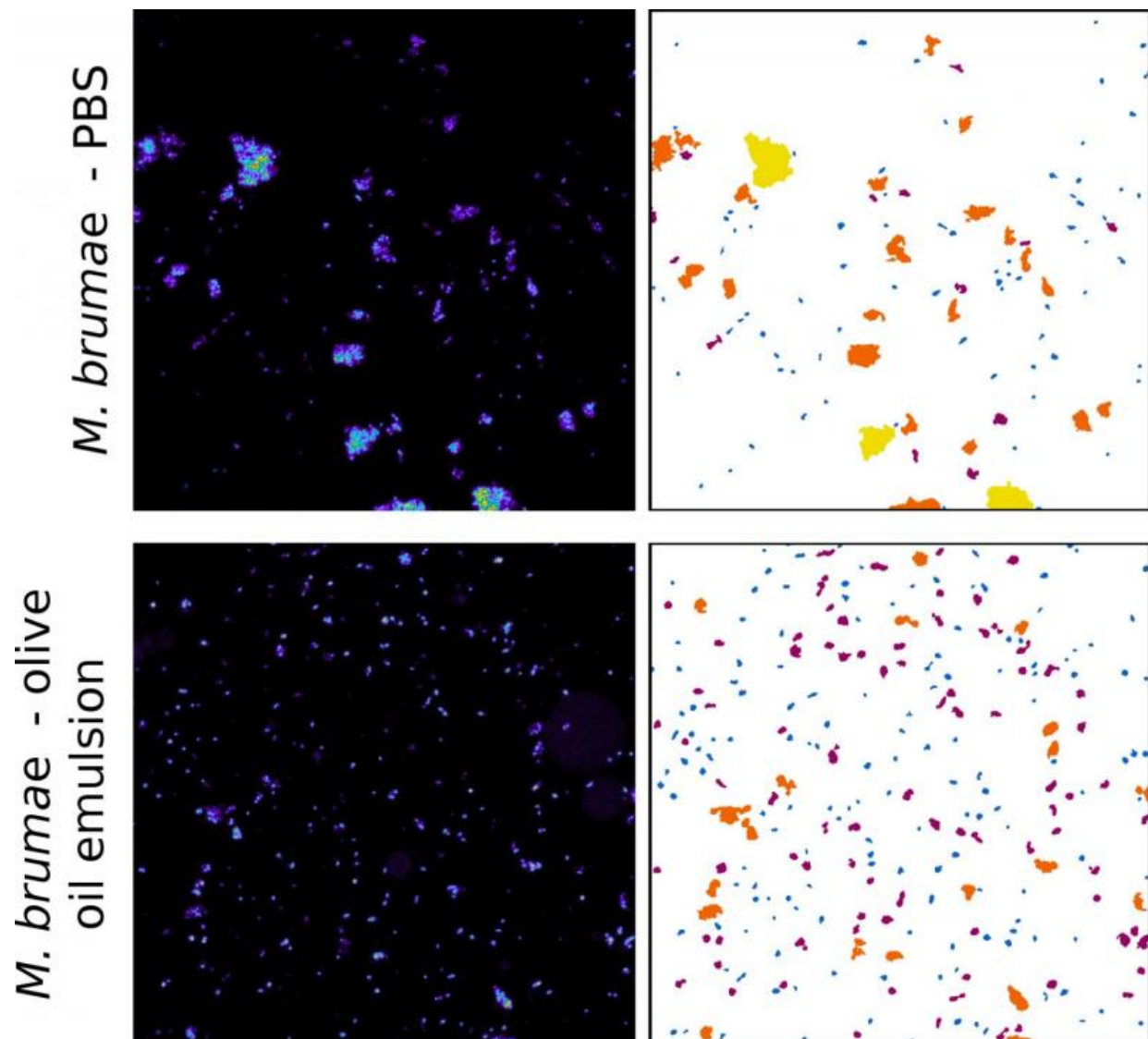


Mycobacterium in olive oil for cancer treatment

June 23 2016



Confocal microscopy images of mycobacterium *M. brumae* in a conventional solution (upper image) and in a solution based on an emulsion using olive oil

(bottom). It can be appreciated that the olive oil based emulsion significantly reduces clumping. Credit: UAB

Researchers at the Universitat Autònoma de Barcelona announced one year ago that the cells of the *Mycobacterium brumae* offer an improved alternative to current bladder cancer treatments such as BCG, an immunotherapy based on the *Mycobacterium bovis*, which can cause infections.

Since then, they have been looking for ways to improve the immunotherapeutic activity of *M. brumae* through the design of different emulsions that can increase the homogeneity and stability, and therefore the efficacy, of the mycobacteria solutions when introduced into the body.

Researchers found a way to reduce the clumps produced naturally when mycobacteria cells, which possess a high content of lipids in their walls, are introduced into the usual aqueous solutions used for intravesical instillation in bladder cancer patients. This clumping may interfere with the interaction of the mycobacteria-host cells and negatively influence their antitumor effects.

Of the emulsions tested, the one based on olive oil induce a prominent immune response in both in vitro and in vivo experiments. Olive oil preserves the viability of the mycobacteria and provided higher anti-clumping rates, and this indicates favourable conditions for reaching the bladder.

According to Esther Julián, "these results highlight the potential of the olive oil-based emulsion as a promising delivery vehicle for the mycobacterial treatment of bladder [cancer](#)."

More information: Estela Noguera-Ortega et al. Mycobacteria emulsified in olive oil-in-water trigger a robust immune response in bladder cancer treatment, *Scientific Reports* (2016). [DOI: 10.1038/srep27232](https://doi.org/10.1038/srep27232)

Provided by Universitat Autònoma de Barcelona

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