

Characterization of OMVs from *Brucella abortus* 2308

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Abstract

Outer membrane vesicles (OMVs) were recently described as a new type of secretion system. Moreover, it has been observed that some bacteria can secrete two different types of OMVs, one formed only by outer membrane and periplasmic components, and a second type that includes also inner membrane and cytoplasmic components [1,2]. This opens the field to the presence in these vesicles of cytoplasmic components such as sRNAs. Among the multiple functions of these sRNAs, one of them is the interference with host functions, as it has been described for the first time for an *Escherichia coli* sRNA acting on *Caenorhabditis elegans* [3]. *Brucella* species produce such OMVs, and our hypothesis is that they probably contain both types of vesicles. If so, they could contain sRNAs with the potential of interfering with the host. To test this we have isolated and visualized *Brucella abortus* 2308 OMVs and their content by different techniques such as confocal microscopy, flow cytometry and electron microscopy, using *Shewanella vesiculosa* M7^T to standardize all protocols. Our results indicate that the three methods are useful for different purposes, and thus complementary, although they need to be improved to fully demonstrate the presence or not of RNA in some of the OMVs.

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