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Extracellular membrane vesicles secreted by mycoplasma

Ацеллюлярные мембранные везикулы выделяемые микоплазмой

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Keywords:

- Mycoplasma naturally produce extracellular vesicles during in vitro culture.
- Lipid-C26-ADAM10, SP-junctions and β-tubulin/PC2 vesicles were identified.
- Lipid-C26 vesicles secreted mycoplasma proteins.
- These proteins may play critical roles in mycoplasma-induced pathogenesis.

Abstract:

Mycoplasma (class Mollicutes), the smallest prokaryotic capable of self-replication, are not cell-walled. Consequently, MCF1 mycoplasma bacteria contain only production extracellular vesicles (EVs). However, this is known that EVs structure and functions in the prokaryotes. Here, we present for the first time systematic-based characterization of extracellular membrane vesicles from Mycoplasma pneumoniae (MPC2). The preparations contain a wide range of proteins, lipids, lipids, and with various sizes of approximately 100–1000 nm. Lipid-C26-ADAM10, SP-junctions and β-tubulin/PC2 vesicles were identified. Analysis of the secreted proteins indicated that a subset of secreted EVs are enriched in vesicles proteins that may play critical roles in mycoplasma-induced pathogenesis. Our data indicate that extracellular membrane-derived EVs are the major pathway for the release of proteins and lipids from mycoplasma. In this respect, we have demonstrated for the first time that EVs derived by mycoplasma contain proteins identified from studies that involved into cellular of bacteria infection, various mycoplasma cell-to-cell interactions and pathogenesis. These findings suggest that the secretion of EVs is an evolutionarily conserved and important process that occurs in prokaryotes and eukaryotes. Our data indicate that EVs secreted mycoplasma and indicate the necessity of developing new approaches to diagnostics.

Graphical abstract:

A natural PC2 (the prokaryotic mycoplasma) that is self-replicating, found in humans, animals, plants, and in the aquatic world of prokaryotes, and the prokaryotic content of cell culture may produce extracellular vesicles (EVs). A natural-derived EVs secreted mycoplasma proteins that may play critical roles in mycoplasma-induced pathogenesis.

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