

# Huge Modification of the Cell Theory by the Recent Discovery of the Widespread Cell-derived Extracellular Vesicles

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**Abstract:** The aim of this work is to discuss the necessity to strongly modify the powerful well-acknowledged cell theory by taking into account the recently discovered universal cell-derived extracellular vesicles (EVs). In a great breakthrough, EVs are now known to mediate important cell's interconnections, which are resting on many still unknown mechanisms. There is a missing step between the accumulated biological knowledge about EVs during two decades and the many recent preclinical searches, dealing with a few human patients compared to controls, for EVs applications in oncology. In this case, the huge amount of different cells-derived EVs generates an inextricable complexity. To evidence unknown EV-mediated mechanisms, a simple cell model would be much more convenient. The microorganism *Dictyostelium discoideum* (Dd) is ideal to achieve this goal as a wonderful eukaryotic *in vitro* and *in vivo* cell model. In 1998, we have discovered Dd EVs as mediating a new multidrug resistance mechanism, and also the normal and physiological Dd cells-release of different EVs during the well-separated growth and starvation-induced differentiation. Moreover, Dd cells are devoted with many other assets. Axenic Dd cells are very well suited for conditioned-medium experiments to study the influence of specifically generated Dd

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EVs upon naive Dd cells, as will be shown in this presentation.

**Keywords** Exosomes; Microvesicles; Apoptotic Bodies; Cancers; *Dictyostelium discoideum*; Eukaryotic Cell Model



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