Visualizing apoptosis driven *Chlamydia* infection

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Intracellular pathogens that survive in phagocytic cells have developed strategies to silently infect their preferred host phagocytes. The most extensively studied example of an immune silencing phagocytosis process is the uptake of apoptotic cells. During this process, immune mechanisms are suppressed by the recognition of apoptosis related molecules like phosphatidyl serine (PS) on the membrane of apoptotic cells. In previous studies, we found that *Chlamydia* can infect and survive inside polymorphonuclear neutrophil granulocytes (PMN). Since a major function of macrophages (MF) is the clearance of apoptotic cells, we investigated whether monocyte derived MF can ingest apoptotic PMN that harbor intracellular *Chlamydia*. We found that *Chlamydia pneumoniae* (*Cp*) transferred by apoptotic PMN survived and multiplied inside MF. In contrast, direct ingestion of *Cp* by MF resulted in a persistent-like state of infection. *Chlamydia* can also develop and multiply in epithelial cells. We found that also here PS-positive *Chlamydia* containing blebs develop. In this study we want to visualize *Chlamydial* transfer between infected cells. Therefore we use live cell imaging with a Carl Zeiss Live 7 confocal microscope and focus on the development of *Chlamydia* containing blebs and the subsequent transfer to human macrophages. Preliminary data suggest that part of the blebs are derived from endoplasmatic reticulum membrane were other blebs are derived from host cell membrane.

These studies underline the importance for *Chlamydia* to hide inside apoptotic cells or cell remains, to silently transfer to other host cells.