Poster

3D CLEM-SEM for Studies on the fascinate tubular structures of Salmonella in situ during host cells infection

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Salmonella is a gram-negative facultative intracellular pathogen that can cause a variety of diseases in different hosts. Both \textit{in vitro} and \textit{in vivo} models have demonstrated the ability of Salmonella to inhabit and replicate within a membrane-bound compartment within host cells, the Salmonella-containing vacuole (SCV). From within this compartment, these bacteria can modulate trafficking of the SCV. Late stages of SCV modification include the formation of tubular membrane extensions known as Salmonella-induced filaments (Sifs). Sifs are thought to result from the fusion of late endocytic compartments with the SCV. In the context of establishing experiments to address biological questions on this paradigm we present here the powerful of CLEM (correlative light electron microscopy) that combines FLM (Fluorescence Light Microscopy) and 3D FIB-SEM (Scanning Electron Microscopy and Focused ion beam milling). We have applied this combination of techniques to study the structural dynamics of Sifs function in a model host-cell experimental system and report on the three-dimensional ultrastructural organization as observed for the first time by CLEM-SEM-FIB.