



# Precipitation of ACC in liposomes – a model for biomineralization in confined volumes.

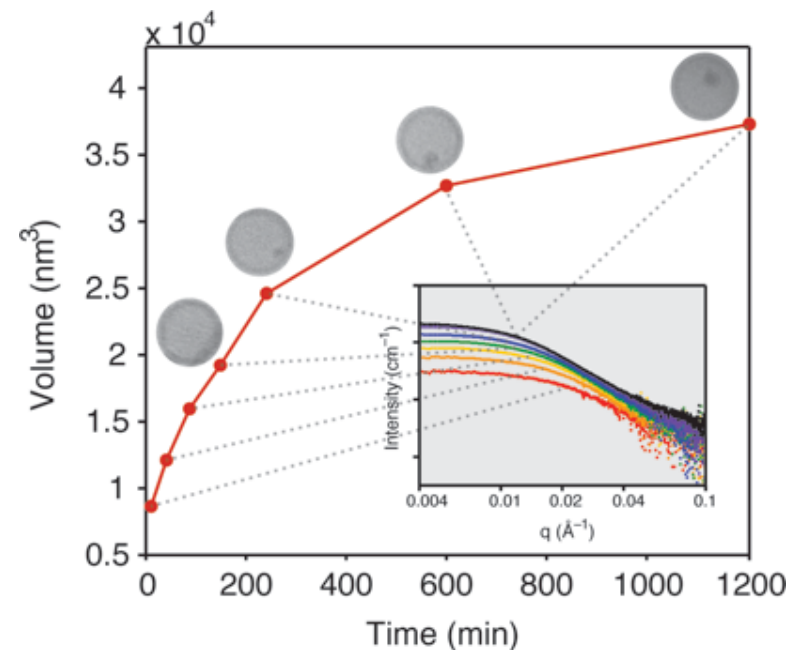


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The use of amorphous minerals as precursors is a widespread strategy in biomineralization that is thought to play a major role in the biological ability to control polymorph and crystal shape, and impart outstanding mechanical properties. This level of control is still beyond our synthetic capabilities. Unlike most *in vitro* syntheses performed in bulk solution, biological processing of amorphous minerals typically occurs in small phospholipid bilayer-delineated compartments. To understand the influence of confinement we use liposomes to model the biologically controlled precipitation of amorphous calcium carbonate (ACC). We find that liposome-encapsulated ACC is stable against crystallization, and is ideally suited to investigate the influence of lipid chemistry, particle size, and soluble additives on the stability and transformation of ACC.



Growth of liposome-stabilized ACC nanoparticles studied by X-ray scattering and cryo-electron microscopy.

