Poly(electrolyte) Microcapsules as Novel Vehicles for Macromolecular Crystallization

Ramos-Padilla, Natasha

Varela-Soler, Yadiel

Aspirin is one of the most beneficial analgesic drugs created, however it's also one to which people are most allergic to; there for creating a microcapsule that is capable to control its release would be another step in drug delivery. These microcapsules are formed in a process called layer by layer "LBL" assembly, therefore they have to withstand its mold dissolution and also the crystallization of aspirin inside them. Microcapsules have previously been used in the transportation of other substances like protein and enzymes, this means that they should hold on throughout the process. The construction of the microcapsule's layers were successfully made with alternate exposure of 400uL chitosan 1mg/mL and 400uL alginate 1mg/mL; with a 400uL NaCl rinsing in between. The center mold of the microcapsules, made out of polystyrene, was completely dissolved using Tetrahydrofuran "THF". Although the layers seemed not to react to this hydration process, it is sure that crystallizing in micro capsules is possible when the hydration is completed due to a successful comparison with an alginate microcapsule. These alginate microcapsules, successfully made with spherification, are equally permeable as those made with the layer by layer process. Crystallizing salicylic acid inside these LBL micro-capsules will make possible the control in timing and quantity of salicylic acid released.

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