CELL **Sheila Murphy** **Sunday, March 25, 2012**

94 - Thiolated chitosan/glycosaminoglycans multilayered films: QCM-D study on the films formation and their biological properties

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Layer-by-layer technique is widely used to produce polyelectrolyte multilayered films for material surface functionalization. The technique simplicity coupled with the biological potential of biopolymers, e.g. polysaccharides, make such assemblies a suitable choice for many biomedical applications. In this study the formation of the films comprising of thiolated chitosan and glycosaminoglycans (GAGs) by alternate deposition was assessed in situ using QCM-D. Thiolated chitosan was used under the hypothesis of disulfide formation between its molecules to increase stability and/or stiffness of the films. The effects of the chitosan modification degree and GAGs molecular weight on the film thickness were investigated. All experimental groups showed exponential film growth, while the thickness increased with the chitosan thiolation degree and molecular weight of GAGs. Cellular behavior on the assemblies was found to be tunable by the appropriate selection of the terminate layer. Antimicrobial activity and protein adsorption on the new constructs are also commented.

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Location: San Diego Convention Center
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