

Preparation of Nanoliposomes Filled with Alginate Hydrogels for Drug Delivery Application

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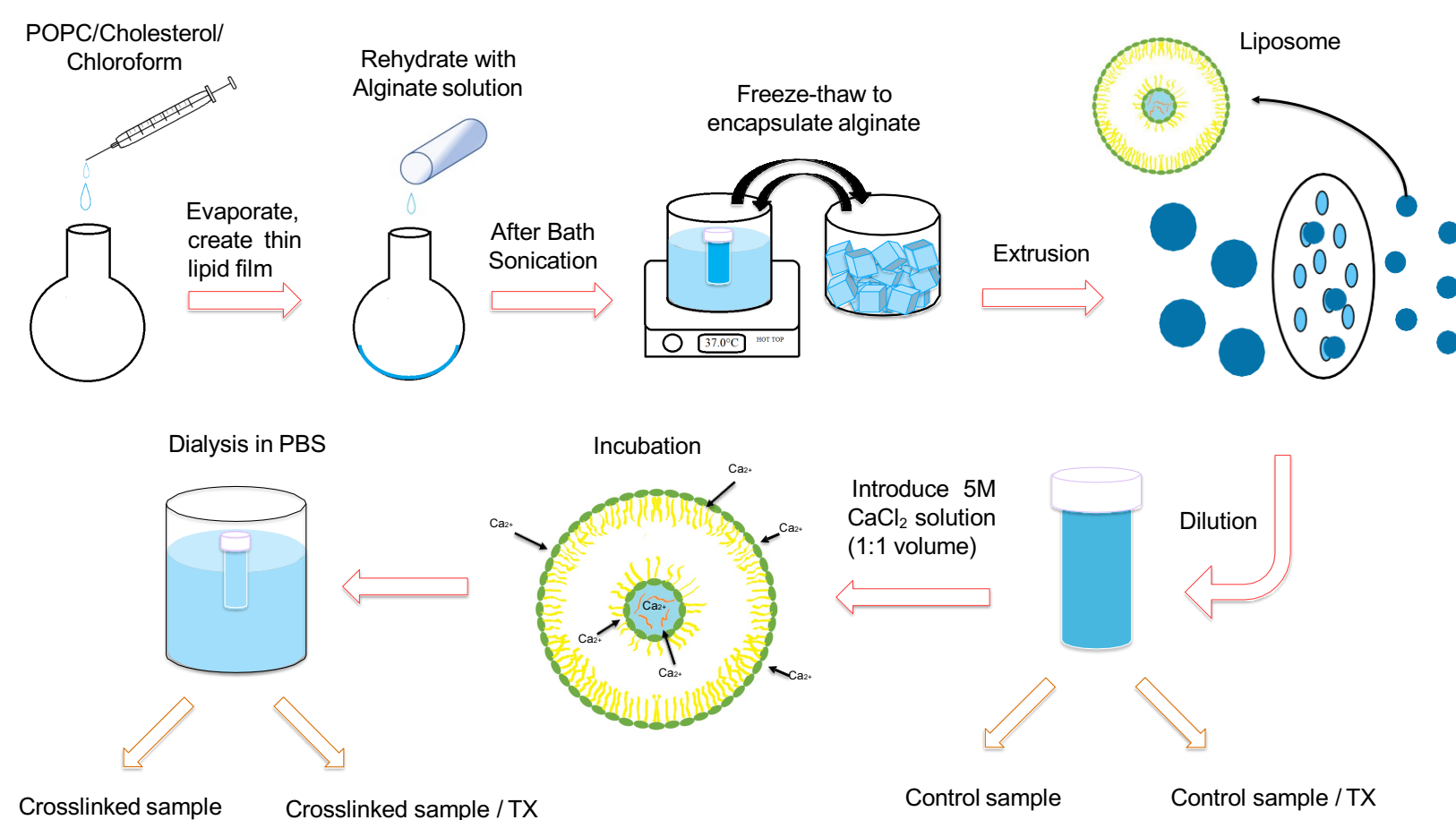
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Background

- Nanoliposomes are vesicles that has an ability to carry hydrophilic and/or hydrophobic drugs to the diseased site. However, its physical properties to hold drug are unstable. One of the most promising approaches used to address this limitation is to include a polymeric scaffold in the liposomal core to provide mechanical support for the lipid membrane. Alginate as a natural polymer has been widely used for biomedical applications as they are biocompatible and biodegradable with tunable physical and chemical properties.
- The goal of this project is to develop a facial and robust method for fabrication of liposomes with alginate hydrogel crosslinked with calcium ions in their core.

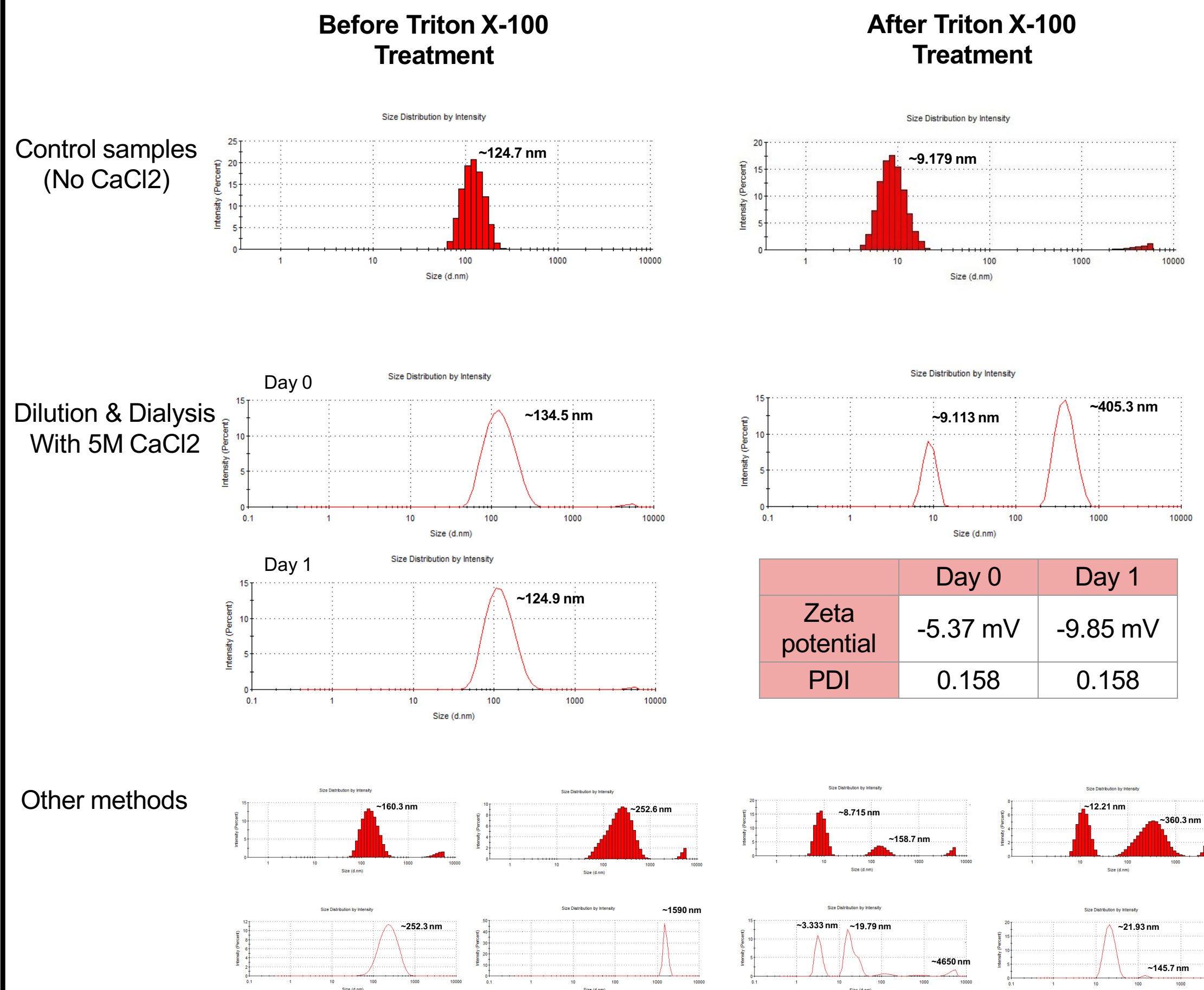
Methodology



Acknowledgment

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Results



Conclusions

- This study describes a reliable method for preparation of nanoliposomes with alginate hydrogel core.
- Through removal of lipid membrane surrounding the nanogels, we were able to provide a direct evidence for formation of a gel within liposomes using DLS analysis.

References

Guo, P., D. Liu, K. Subramanyam, B. Wang, J. Yang, J. Huang, D. T. Auguste, and M. A. Moses. Nanoparticle elasticity directs tumor uptake. *Nature Communications* 9: 2018.