

Evaluation of Alginate-Based Gels as Drug Carriers for Controlled Release of Spiramycin.

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INTRODUCTION & AIM

The Challenge

Antibiotic resistance is a critical global health crisis. Conventional drug delivery methods often lead to systemic toxicity or rapid drug clearance, contributing to sub-therapeutic concentrations and the development of resistance.

This study focuses on Controlled Drug Delivery Systems (CDDS) utilizing alginate-based particles (hydrogels and aerogels).

Objective

This study aims to evaluate five novel Al-based formulations for controlled spiramycin release.

METHOD

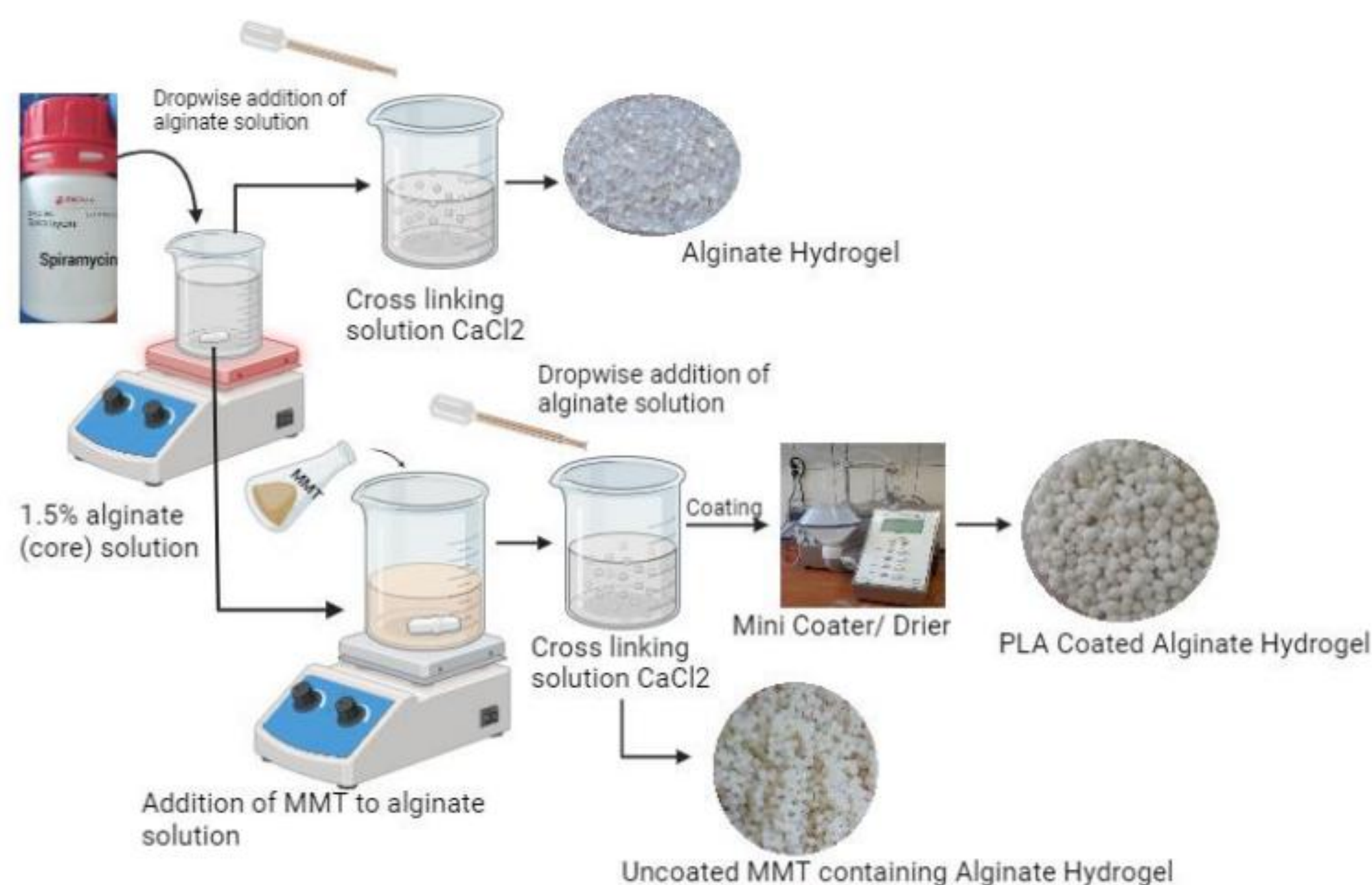


Figure 1. Method for Hydrogel

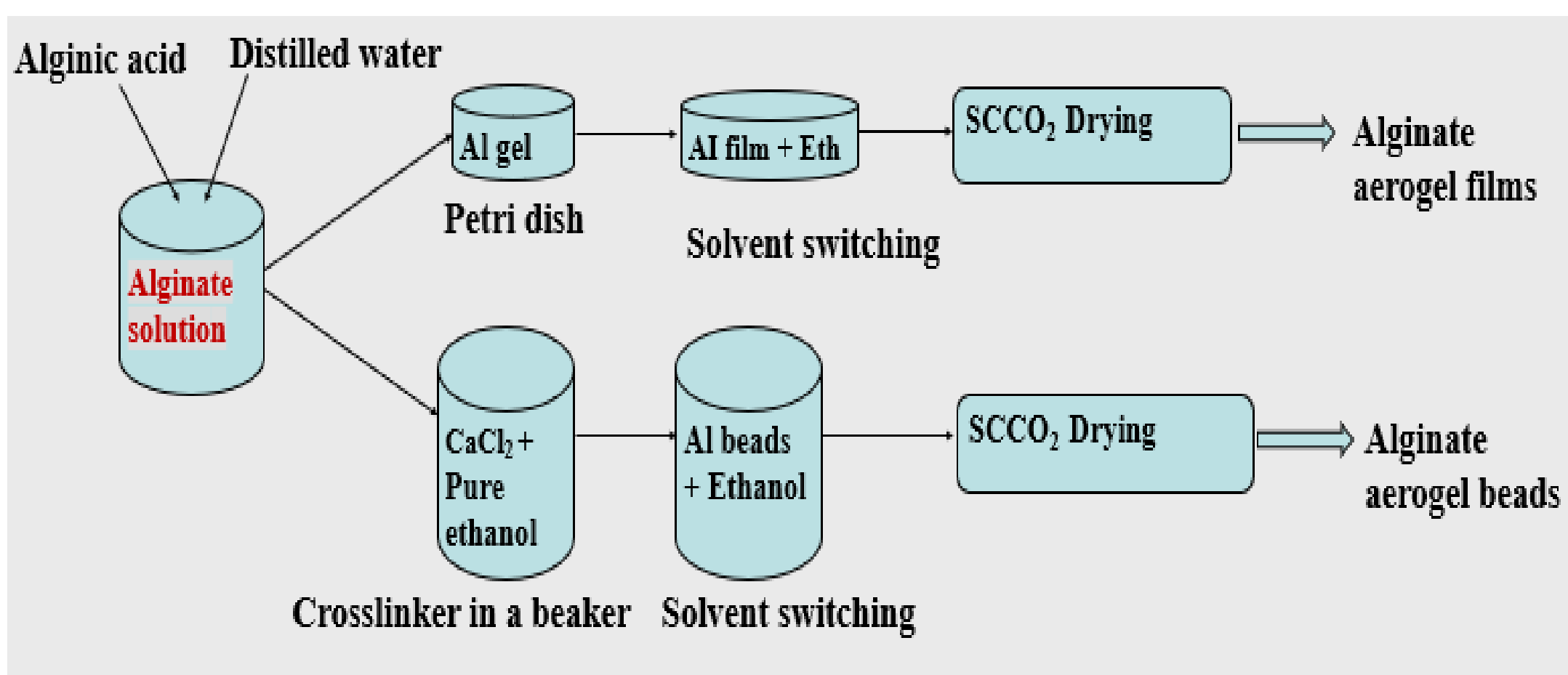


Figure 2. Method for Aerogel

RESULTS & DISCUSSION

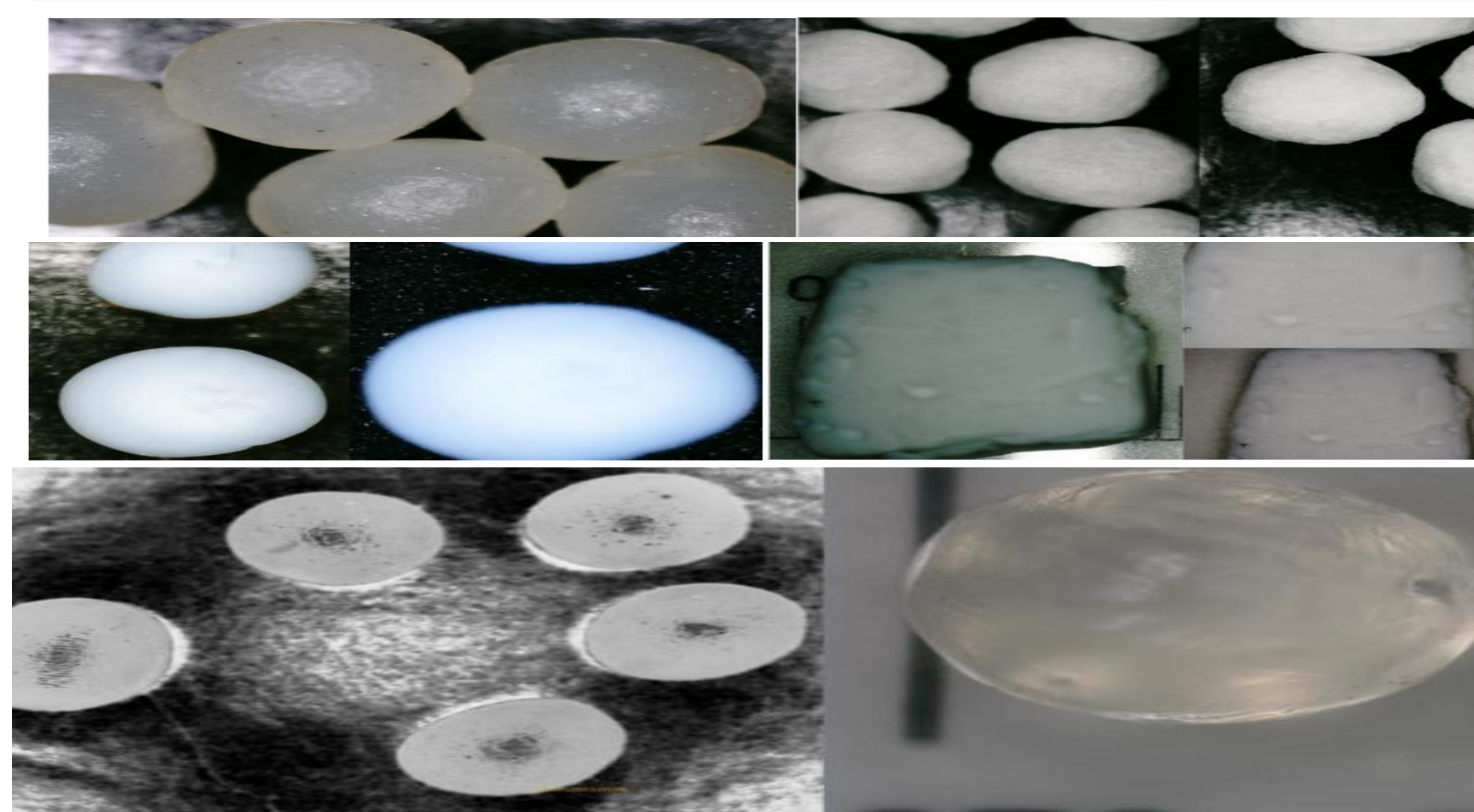


Figure 3. Structure of SMAH, SPMah, SAAB, SAAF, SMAH, and SAH.

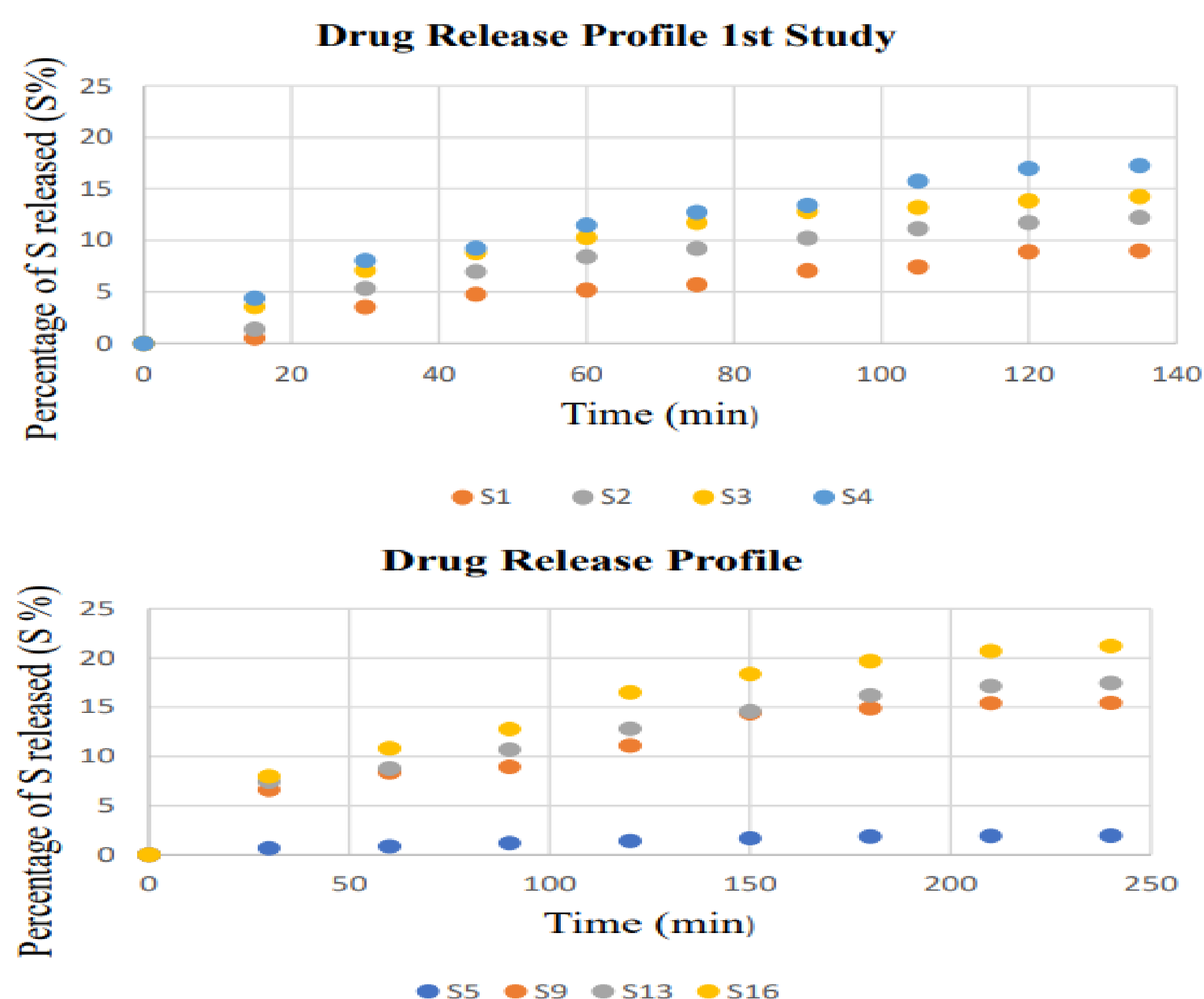


Figure 4. Release profile of SPMah(above), SMAH(below).

CONCLUSION

The results demonstrate that Al-based DDS, particularly SPMah and SAAF, offer promising platforms for controlled spiramycin delivery.

REFERENCES

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- [2] M. Guastaferrero, E. Reverchon, and L. Baldino, "Agarose, Alginate and Chitosan Nanostructured Aerogels for Pharmaceutical Applications: A Short Review," *Frontiers in Bioengineering and Biotechnology*, vol. 9. Frontiers Media S.A., May 12, 2021. doi: 10.3389/fbioe.2021.688477.