

GREEN SYNTHESIS OF CHICKPEA WASTE (*Cicer arietinum*)- DERIVED SILVER NANOPARTICLE FOR ANTIMICROBIAL APPLICATION

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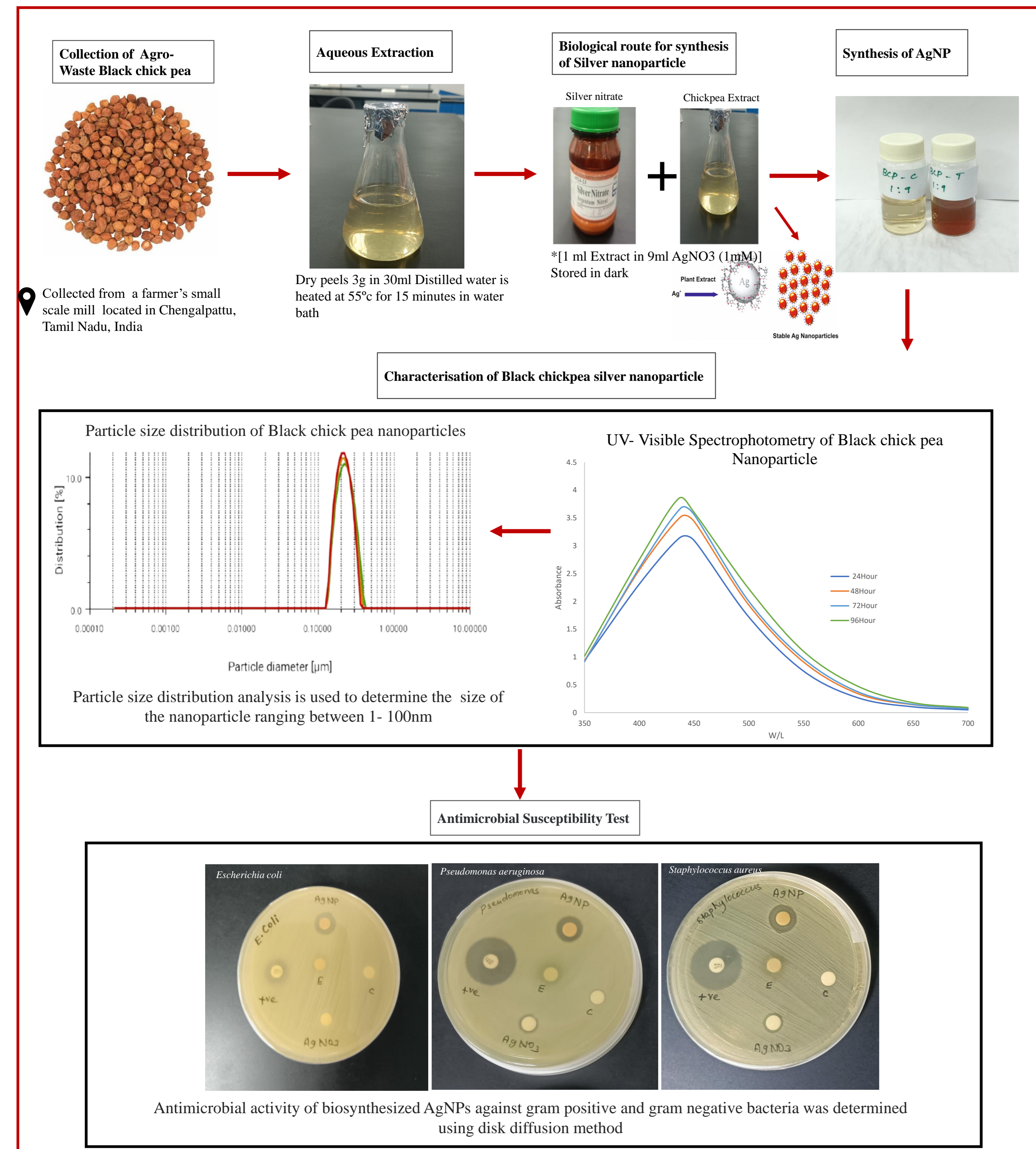
1 INTRODUCTION

- Urban India generates approximately 62 million tones of municipal solid waste each year [1]
- Waste generation and disposal are one of the significant problem now-a-days.
- These wield tremendous impacts on environment, hence Biosynthesized nanoparticles are gaining more importance because of their unique biological applications and can be synthesized using biowaste like fruits peels, legume waste, vegetable peels [2]
- Chickpeas available black in colour are a good mix of antioxidants, anthocyanins, cyanidin, phytonutrients that help in maintaining healthy blood vessels. Being rich in folate, magnesium and other minerals, these legumes prevent formation of plaque in the arteries, blood clots.
- Here, we report on the development of stable silver nanoparticles by a reduction of aqueous Ag⁺ ion with the extract of biowaste *Cicer arietinum* peels, to eliminate tremendous heap biowaste as well as to gain maximum benefits out of it.

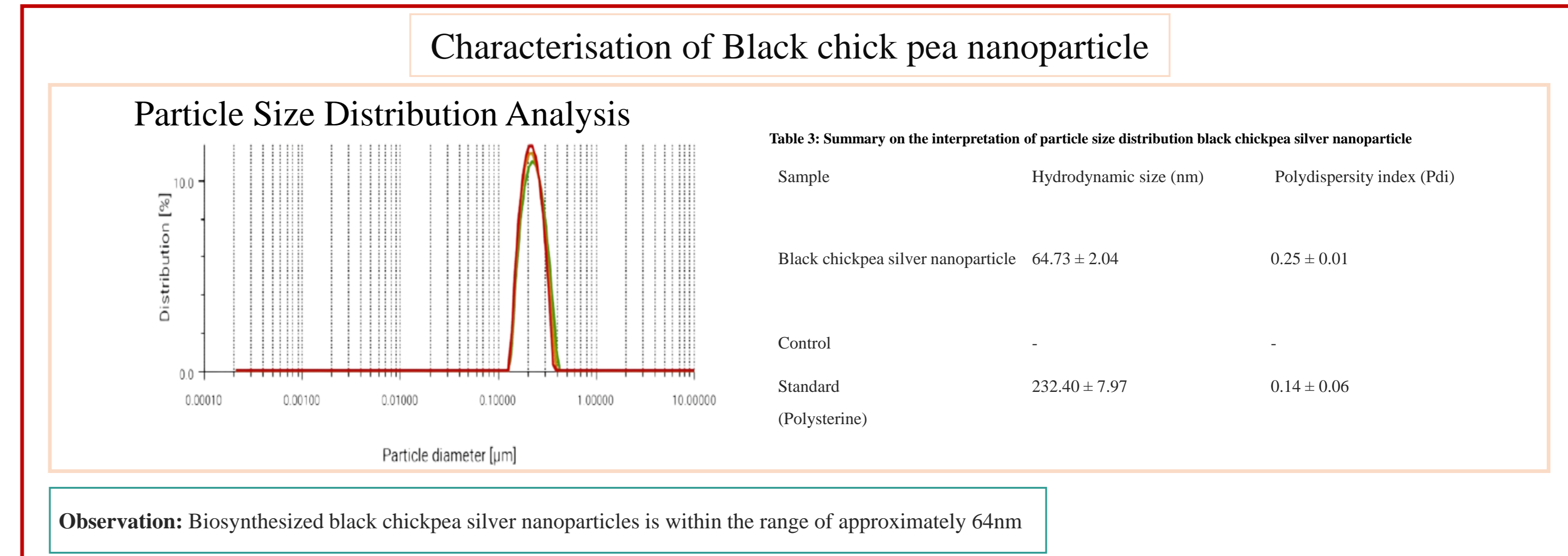
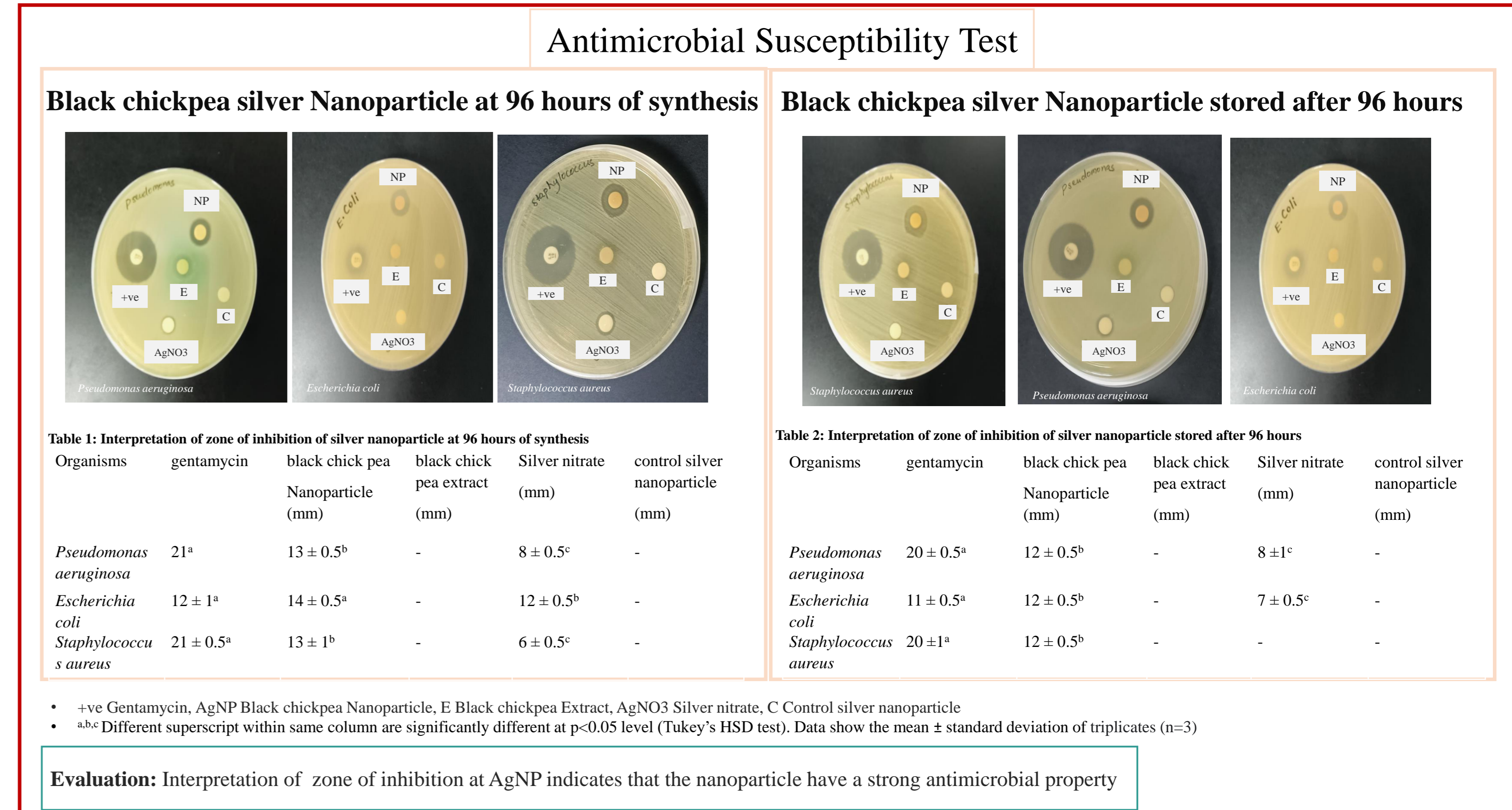
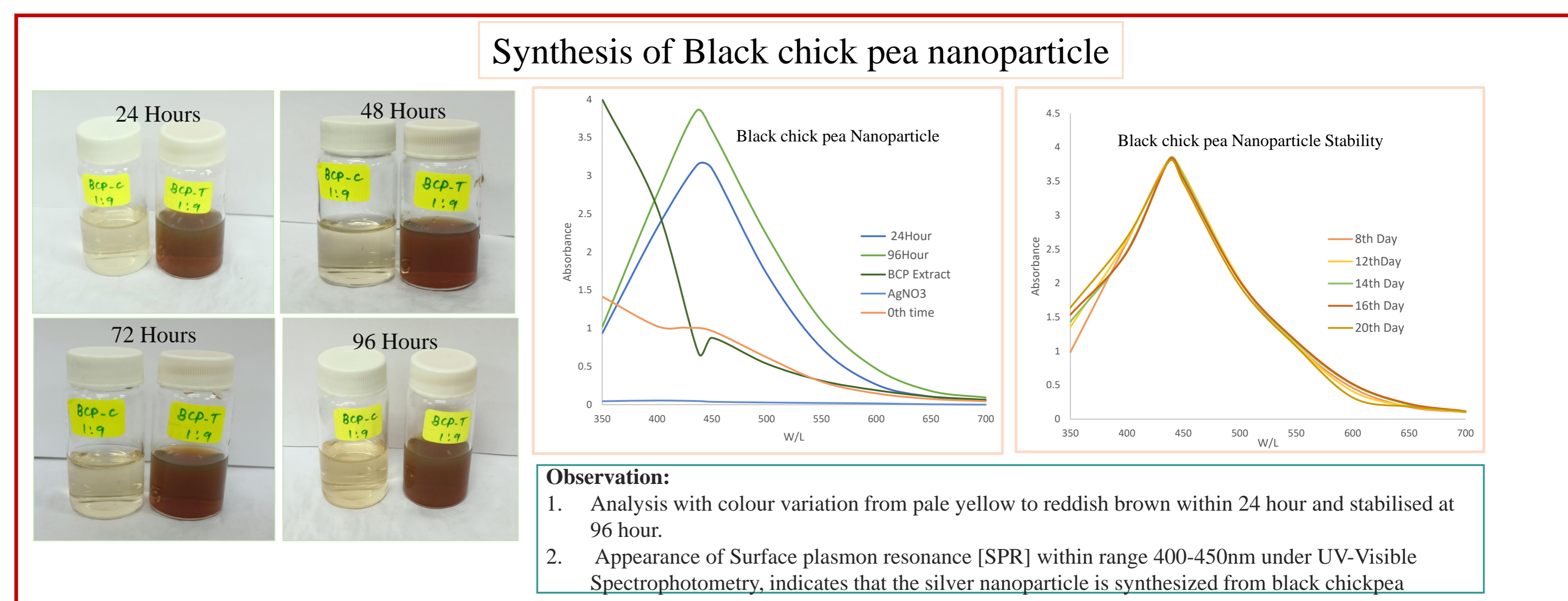
2 PURPOSE OF THE STUDY

- Synthesis of Black chick pea silver nanoparticle by Biological route
- To study the morphology properties of black chick pea nanoparticle and evaluation of their antimicrobial properties

3 METHODOLOGY



4 RESULT ANALYSIS



5 CONCLUSION

- Biosynthesized Black chick pea silver nanoparticle can be exploited as potential candidate for antimicrobial agent
- Scientific and systematic use of agro-waste black chick pea for nanoparticle synthesis could in turn result in a sustainable solution for waste management

6 FUTURE WORK

- Analysing the Cytotoxicity of biosynthesized silver nanoparticle against human cancer cell MCF-7 and normal cells 3T3
- Incorporation of biosynthesized silver nanoparticle into Polyhydroxyalkanoates (PHA) a unique development of active food packaging material for food packaging and preservative applications

7 REFERENCE

- Sana, S. S., & Dogiparthi, L. K. (2018). Green synthesis of silver nanoparticles using Givotia moluccana leaf extract and evaluation of their antimicrobial activity. *Materials Letters*, 226, 47-51.
- Castillo-Henríquez, L., Alfaro-Aguilar, K., Ugalde-Álvarez, J., Vega-Fernández, L., Montes de Oca-Vásquez, G., & Vega-Baudrit, J. R. (2020). Green synthesis of gold and silver nanoparticles from plant extracts and their possible applications as antimicrobial agents in the agricultural area. *Nanomaterials*, 10(9), 1763.

ACKNOWLEDGEMENT

