# SIIC089

## TOXICITY EFFECT OF BEIJING GRASS MEDIATED SILVER NANOPARTICLES IN MULTICELLULAR CELL

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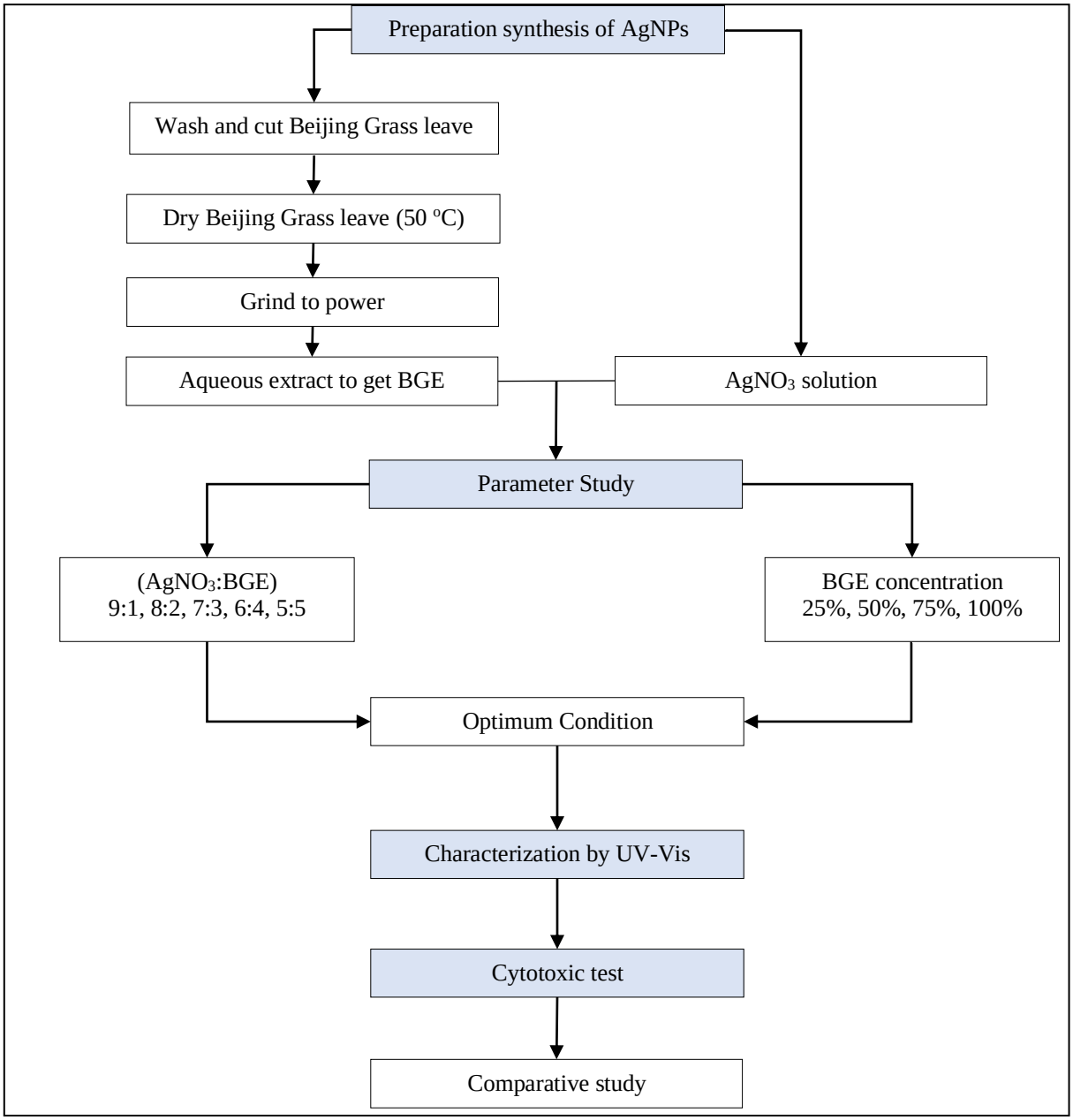
***Abstract:***
Silver nanoparticles are the nanoparticles of silver which have the typical size between 1 nm and 100 nm. Silver nanoparticles have a unique structure which helps in antimicrobial action, environmental control, in therapist as well as device that are used in medical. There is a various type of synthesis silver nanoparticles which commonly known as physical method, chemical method and green synthesis. Physical and chemical methods have many disadvantages compared to advantages such as it required big capital and have a safety issue. Therefore, green synthesis with plant extract is the simple, cheap, safe and famous method among the researcher. In this study, Beijing grass leave extract used to reduce and stabilize the silver ion in the formation of silver nanoparticles. the UV-Vis spectrophotometer was used to observe the formation of silver nanoparticles based on their wavelength and absorption band. The effect of Beijing grass extract concentration, the effect of volume ratio silver nitrate to Beijing grass extract in silver nanoparticle and toxicity effect of silver nanoparticles were the main focus in this study. 100 % concentration of Beijing grass and 5:5 volume ratio silver nitrate to Beijing grass extract in silver nanoparticles were the optimum value in the synthesis of silver nanoparticles. Every multicellular cell has a different effect based on the dosage consumption on silver nanoparticles. The human cell obviously can deal with high concentration of silver nanoparticles compared to the marine invertebrate cell.

***Keywords*:**
Silver Nanoparticles, Silver Nitrate, Beijing Grass Extract, Toxicity, UV-Vis

***Objectives:***

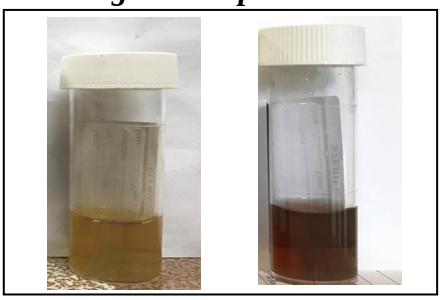
- To study the effect of Volume Ratio of silver nanoparticles (AgNPs) to life cell.
- To study the effect of Beijing Grass Extract (BGE) concentration in the silver nanoparticles (AgNPs) to life cell.
- To study the toxicity of silver nanoparticles (AgNPs) to life cell.

***Methodology:***

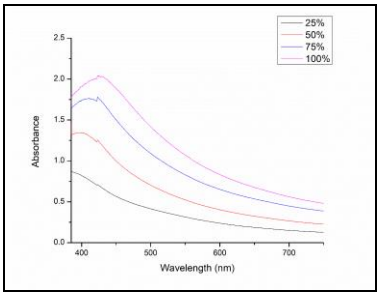


***Results:***

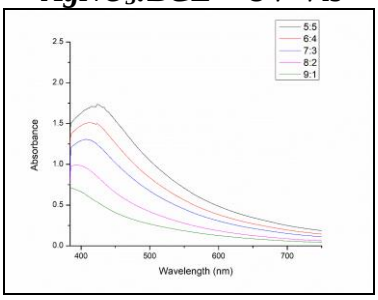
***AgNPs – Optical Test***



***Volume Ratio – UV-Vis***




***$AgNO_3$:BGE – UV-Vis***




***Conclusion:***

The silver nanoparticles were synthesized via green synthesis method which the most environmental-friendly method that have no hazardous waste. Green synthesis also required less cost since it just need a plant extract (Beijing grass extract) and silver nitrate as raw material. The Beijing grass extract plays an essential role as reducing and stabilizing agent. The experiment was conducted in two parameters which were the concentration of Beijing grass extract and volume ratio ($AgNO_3$:BGE) of silver nanoparticles. The result showed 100 % Beijing grass extract concentration and 5:5 volume ratio was the optimum value for the silver nanoparticles formation. A simple characterization has been made using UV-Vis spectrophotometer to indicate the silver nanoparticles formation. The study has been made on cytotoxic of silver nanoparticles toward marine invertebrates and human cell. The study shows different result on both type of cell. For marine invertebrates, it required low silver nanoparticles concentration mean while high silver nanoparticles concentration is required to human cell.