

Comparison of Stability Silver Nanoparticle with Ethanolic Extract of Telang Flower and Silver Nanoparticle with Water Extract of Telang Flower

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ABSTRACT

The synthesis of silver nanoparticles can use plant extracts as silver reducing agents. The content in plants that can play a role as a reducing agent is flavonoids. Telang flowers (*Clitoria ternatea*) are plants that contain flavonoids. The use of different solvents on plant extracts can affect the stability of silver nanoparticles. The purpose of this study was to compare the stability of silver nanoparticles with ethanolic extract of telang flowers and silver nanoparticles with water extract of telang flower. In this research, it started from making ethanol extracts of telang flowers with infundation modification method and telang flower extracts with infundation methods, biosynthesis of silver nanoparticles with bottom-up method, characterization by visual observation and wavelength measurement, evaluating stability by visual observation, wavelength, absorbance, particle size, polydispersity index, and zeta potential. The results of the calculation %CV silver nanoparticles of telang flowers with ethanol extract and silver nanoparticles of telang flower with water extracts respectively were the value of %CV wavelengths 6.497% and 0.78%, the value of %CV absorbance 10.84% and 17.46%, the value of %CV particle size 11.404% and 15.029%, the value of %CV polydispersion index 17.22% and 14.61%, the value of %CV zeta potential -35.00% and -59.95%. Based on the %CV values obtained, silver nanoparticles with water extract of telang flower was more stable when viewed from the parameters of wavelength, polydispersity index, and zeta potential. Whereas in silver nanoparticles with ethanolic extract of telang flowers has better stability when viewed from the parameters of the absorbance value and particle size. So it can be concluded that the use of different solvents in extracts can affect the stability of the formed silver nanoparticles (*Clitoria ternatea*).

Key Words: silver nanoparticles, ethanolic extract, water extract, stability.