

Biosintesis Nanopartikel Perak Dengan Menggunakan Air Rebusan Rimpang Sebagai Agen Pereduksi Ion Ag^+ = Biosynthesis Of Silver Nanoparticles Using Water Decoction Of Rhizome As A Reduction Agent of Ag^+ Ion

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Abstrak

Nanopartikel perak telah berhasil dibuat dengan menggunakan metode biosintesis yang memanfaatkan air rebusan rimpang sebagai agen pereduksi. Nanopartikel perak telah dikarakterisasi dengan menggunakan spektrophotometer UV Visible sehingga menghasilkan karakterisasi yang unik dari larutan nanopartikel perak. Ukuran nanopartikel perak yang didapatkan berkisar antara 50-60 nm. Metode kolorimetri telah diterapkan dalam mengaplikasikan nanopartikel perak sehingga dapat mendeteksi pestisida dithane pada konsentrasi 500 ppm dalam waktu deteksi tiga hari setelah pencampuran $AgNO_3$ dengan air rebusan Jahe.Silver Nanoparticles is silver with a particle size in the range of interval 1- 100nm. Silver nanoparticles can be obtained from a top-down process (Physics) and bottom-up (chemical and biological) process. Silver nanoparticle research developments related to recently find the right method that can be used to obtain nano silver particles with a size that is using green methods syntesis or so-called biosynthesis due to its superiority compared to the method of physics and chemistry. Biosynthesis of silver nanoparticles utilizing biological beings as reduction agents in the synthesis of silver nanoparticles. Silver nanoparticles have been successfully prepared by using a method of biosynthesis use the cooking water ginger as a reducing agent. Silver nanoparticles were characterized using UV-Visible spectrophotometer resulting in a unique characterization of silver nanoparticle solution. Size of the silver nanoparticles obtained between ranged 50-60 nm. Colorimetric method has been applied in the application of silver nanoparticles that can detect pesticides Dithane at a concentration of 500 ppm detection within three days after mixing $AgNO_3$ with Ginger boiled water.