# Biosynthesis of Metallic Nanoparticles with the Use of Extract from Macroalgae Osmundaria obtusiloba

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Nanoparticles are quickly emerging as an area of intense scientific research due to their various applications. Although there are already methods for the synthesis of nanoparticles, the detailed approach can be classified as dangerous and toxic; in addition, the processes can take an unfeasibly large amount of time. The development of a new approach to synthesize nanoparticles using natural resources, such as plants, could mean benefits for the technology and environment. Plants, such as the algae Osmundaria obtusiloba, contain polyphenol properties that make them appropriate reducing and stabilizing agents for the synthesis of metallic nanoparticles. The purpose of this experiment is to determine whether or not, macroalgae, Osmundaria obtusiloba can act as a reducing and stabilizing agent in the biosynthesis of gold nanoparticles, which could mean the development of a cost effective and environment-friendly method. In order to evaluate whether the macroalgae Osmundaria obtusiloba can act as a reducing and stabilizing agent in nanoparticle synthesis, a plant extract was prepared, mixed with the metallic gold solution and heated in order to create nanoparticles. The mixture changed from a yellow color to a dark purple, it determined the formation of nanoparticles. Then they were centrifuged three times and set in a vial to dry by nitrogen. According to our results, we conclude that our hypothesis is accurate on the remarkable physical and chemical properties.

**Awards Won:**