

## عنوان مقاله:

Biosynthesis of Silver Nanoparticles by Amaranthus Retroflexus Extract and Their Antiproliferative Activity InVitro

## محل انتشار:

اولین سمپوزیوم بین المللی سرطان نسترن (سال: 1394)

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## خلاصه مقاله:

Amaranthus retroflexus is a species of flowering plant in the Amaranthaceae family which was used for a multitude of food and medicinal purposes by many nationalities. In the recent decade, silver nanoparticles (AgNPs) have attracted attention due to their unique properties, such as antibacterial and anticancer activities. Green synthesis of AgNPs by plants is the novel approach. The aim of this study was to biosynthesize AgNPs by aqueous Amaranthus retroflexus extract and investigate their antiproliferative potential in DU145 human prostate cancer cell line. Silver nanoparticles were synthesized by a rapid method using Amaranthus retroflexus extract. The synthesized AgNPs were characterized using X-ray diffraction (XRD) pattern, Fourier transform infrared (FTIR) spectra, and transmission electron microscopy (TEM). Du145 cells were treated with various concentrations of colloidal AgNPs solution, only leaf extract and/or silver nitrate solution for 48 hours and then cell viability was determined by MTT assay. Also, their influence on the cytotoxicity of doxorubicin was evaluated. The colloidal AgNPs solution exhibited antiproliferative activity in a concentration dependent manner, whereas leaf extract showed proliferative potential. AgNPs solution, leaf extract, and silver nitrate solution had no significant effect on doxorubicin cytotoxicity. The present study showed that aqueous Amaranthus retroflexus leaf extract-synthesized AgNPs have antiproliferative activity against human prostate cancer.

## کلمات کلیدی:

Amaranthus retroflexus, Antiproliferative Activity, Doxorubicin, DU145, Green synthesis, Silver Nanoparticle

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