

Ageing and oxidative stress: Management by plant-mediated synthesized silver nanoparticles

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Ageing is an unstoppable biological phenomenon that concerns most living organisms. The concept of ageing postulates that oxygen-derived free radicals causes age-related cellular and tissue level damage. Overproduction of free radicals may hamper natural cellular antioxidant defenses resulting in oxidation and subsequently, impairing cellular functions. Nanoparticles have been reported to act as effective antioxidants and free radical scavengers. Our research group has explored various medicinal plants for their antioxidant potential. Since, *Murraya koenigii* was found to be highly antioxidant therefore it was of our choice for carrying out the plant-mediated synthesis of silver nanoparticles. The present study deals with *in vitro* assessment of antioxidant potential of aqueous *M. koenigii* extract with silver nanoparticles. Several antioxidant assays viz. DPPH and hydroxyl free radical scavenging activities along with metal chelating power were taken into consideration. The values of the original extract of *M. koenigii* obtained were 61.4, 66, 20, which were raised to 79.09, 71.7, 38.66, respectively after the presence of AgNPs in it. Results, thus, revealed that the extract with silver nanoparticle possesses enhanced antioxidant ability than of the original extract without AgNPs. Therefore, the real opportunity to develop more effective approaches for reducing age-related problems in addition to several diseases comes with in depth study of the underlying causes of ageing. Understanding the role of free radicals in ageing will thus, help us in achieving our goal of defying the process of ageing with nano-based antioxidants from herbal sources.

Biography

Anamika Mubayi is currently working as a core member of Dr. G. Watal's research group for doctoral program in the Department of Chemistry, University of Allahabad, India. She has done her M. S. from the University of Iowa, USA and M. Sc. from CSJM University, Kanpur, India. She has worked as a Research Assistant at the University of Iowa, USA and Senior Research Associate at IIT Kanpur, India. She has several publications in International journals and has been awarded 'Honorable Mention' award in a conference held at Iowa, USA. She has also attended a nanotechnology-based training program at Lausanne, Switzerland.

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