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# Nano Formulations of Natural Product for The Prevention and Treatment of Alzheimer's Disease

Shmmon Ahmad<sup>1</sup> and Abdul Hafeez<sup>2</sup>

<sup>1</sup>Research Scholars, Glocal School of Pharmacy, Glocal University Saharanpur, India

<sup>2</sup>Associate Professor, Glocal School of Pharmacy, Glocal University Saharanpur, India

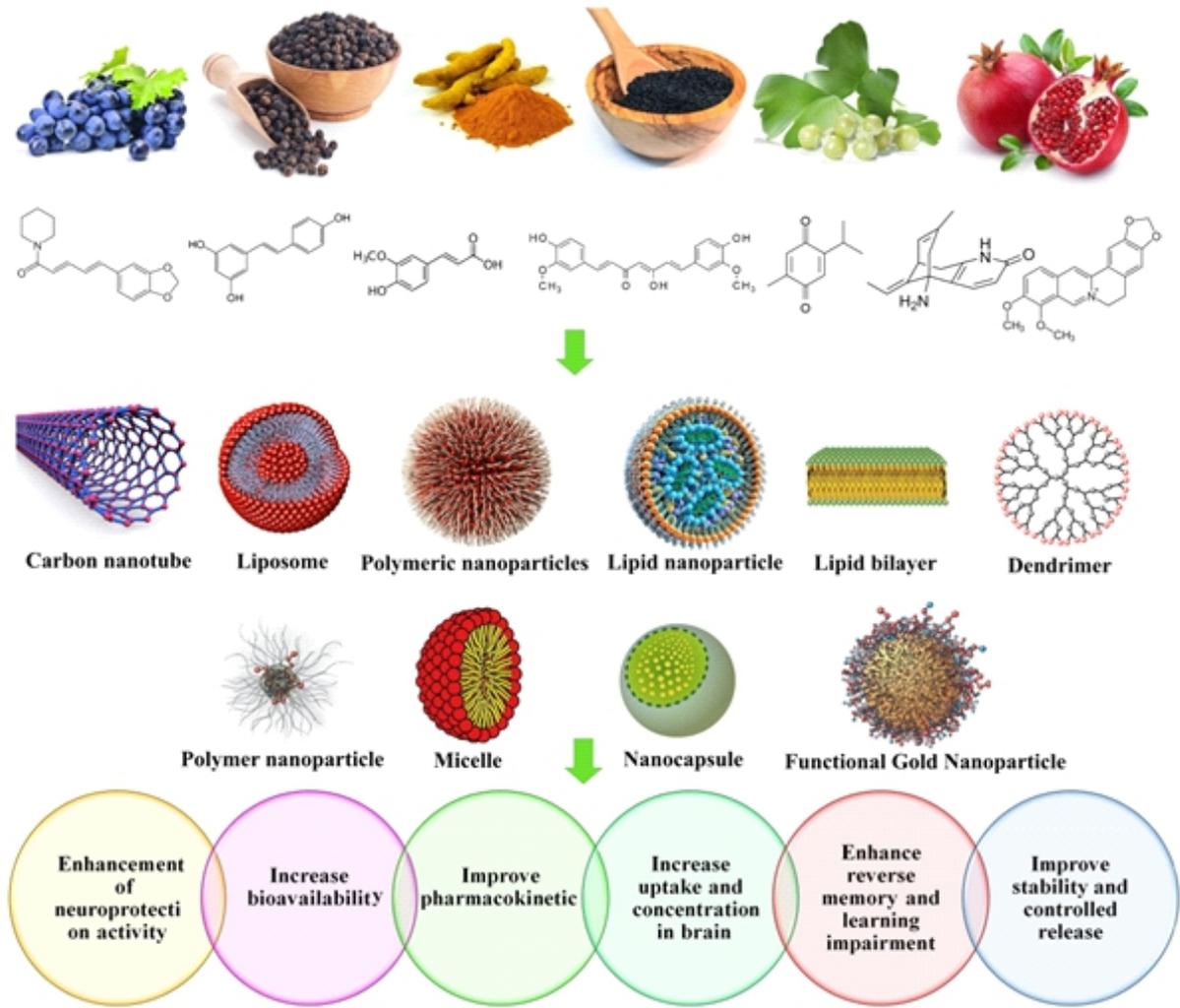
## ABSTRACT

**Background and Aim:** To develop a Nano formulation of Herbal drug for the Treatment of Alzheimer.

**Methods:** The use of herbal medicines has been increasing in the last few years. Recent pharmaceutical research had focused on phytomedicine. Numerous medicinal plants possessing profound central nervous system (CNS) effects and antioxidant activity have recently received attention to improve cognitive function in Alzheimer. Alzheimer causes problems with memory, thinking and behaviour. Currently, there is no efficient therapy for this disorder but a promising approach is represented by nanotechnology, easily multi functionalize devices with size in the order of billionth of meter. This abstract provides a concise survey on the nano-based strategies for Alzheimer's disease treatment, aiming at carrying drugs across the blood–brain barrier, in particular to target the metabolism of  $\beta$ -amyloid peptide, a pivotal player in this pathology.

**Result:** Nanotechnology is one of the most promising and new areas of research in modern science. Nanoparticles possess new and improved properties of material which are mainly based on size, shape, distribution, and morphology than large particles from which the nanoparticles are made. Nanoparticles have a higher surface area which gives larger target interaction. It has many important properties such as low melting point, catalytic activity, high photoconductivity, and high semi-conductivity for the synthesis of metallic nanoparticles, living extracts have been utilized by researchers.

**Conclusions:** It is now becoming well accepted that multiple factors contribute to the progression of Alzheimer disease. The pathogenesis of the disease involves amyloid- $\beta$  cascade, tau hyperphosphorylation, oxidative stress, inflammation, protein misfolding, gene mutation, mitochondrial dysfunction, etc. It has been suggested that the multifactorial nature of AD pathogenesis requires the design of medicines with a wide spectrum of activity. Medicinal herbs are known to consist of multiple compounds and may implicate multiple mechanisms, thus being advantageous over the simple single-target drugs in the treatment of complex diseases. Indeed, natural products attract increased attention.



**Fig. 1:** Nano formulations used to improve the effectiveness of natural compounds



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