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Use of Plant Latex for Nanocarrier Synthesis and Utilizing it in Drug Delivery †

Anita Mirarmandy [1], Amira Abubakar Mohamed [1,*], Lee Si Jie [1], Chua Yeok Mun [1]

[1] School of Biosciences, Faculty of Medicine, Biosciences and Nursing, MAHSA University, Jalan SP2, Bandar Saujana Putra, 42610, Jenjarom, Selangor, Malaysia
* Correspondence: bbsh16091199@mahsastudent.edu.my;
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Abstract: One of the most significant applications of nanomedicine is employing nanoparticles for targeted drug delivery. Using latex-based nanocarrier as a drug delivery system serves as better alternatives since it is eco-friendly and rendered non-toxic. The main aim of this study is to extract latex components, synthesize nanocarriers, and encapsulate with a specific drug for its usage in targeted drug delivery. The latex was collected from a latex secreting tree and extracted using polar and non-polar solvents. The synthesis of nanocarriers was done through a microemulsion technique with the use of surfactants. The extracts and nanocarriers were characterized using UV-Vis, FTIR and GC-MS and SEM analysis. The nanocarriers were then encapsulated with a drug, and the drug release profiles are examined. Antibacterial activity of the latex extracts and loaded nanocarriers was measured by agar well diffusion technique, and antioxidant activity was determined by DPPH and TLC analysis. The latex extracts had antioxidant properties, and the drug-loaded nanocarriers had antibacterial activity.

Keywords: Targeted drug delivery; latex; biopolymer; nanocarriers; bioactivity.

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Conflicts of Interest

The authors declare no conflict of interest.