



Centre for Natural Sciences and Technologies

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PLANT EXOSOMES FOR THERAPEUTICAL USE

RESEARCH/TECHNOLOGY INTRODUCTION

Exosomes mediate intercellular communication by transferring their biologically active content to distant cells and thereby participating in changes in gene expression in target cells. It has been observed that these nanostructures can act as biological effectors also between plants and animals (including humans) and can influence a number of physiological processes. The physiological significance of exosomes has been demonstrated by their involvement in pathological conditions, such as the formation of cancer metastases and the transmission of pathogenic agents in some neurodegenerative diseases.

Animal exosomes have been used for therapeutic purposes for many years, and are **currently being tested to treat the side effects of SARS-CoV-2.** The main advantage of using plant exosomes lies in the possibility of growing a large amount of input material with minimal investment.

POTENTIAL USERS

Pharmaceutical companies, commercial laboratories for drug testing.

ADVANCEMENT OF TECHNOLOGY AND MARKET APPLICATION

Due to their ideal structure and other characteristics, exosomes are promising clinical drug carriers. **Exosomes are produced by cells under natural conditions; in a laboratory environment, these structures can be used to deliver therapeutics to target cells of various origins.**

Animal exosomes are usually isolated from cell cultures, so special facilities are needed to prepare them. Exosomes of plant origin can come either directly from a plant that requires only soil and sun, or from plant cultures, where the natural ability of plant cells to divide is exploited.

ADDITIONAL INFORMATION

