

3rd International Conference on Cell and Gene Therapy

November 21, 2022 | Webinar

B. Bhasker, J Mol Genet Med 2022, Volume 16

Characterization and Identification Of Exosomes Harvested From Stem Cell Cultures

B. Bhasker

Transfusion medicine, Sparsh Hospital, BANGALORE, INDIA.

Purpose/Objectives: Exosomes generated from stem cell cultures stimulate the healing of injured tissue and have immunomodulatory effects on lymphocyte development, activation, and function. It's crucial to learn more about how to identify, isolate, and characterise exosomes from stem cell cultures. The goal of this study is to define the features of exosomes produced from stem cells and to develop ways for purifying them. There are a limited number of articles on this issue, with the majority of studies focusing on the role of exosomes in regenerative medicine and a smaller number of studies focusing on their characterization and separation.

Methodology: Exosomes and the procedures required in their identification, isolation, and characterisation from stem cell cultures was the subject of recurrent database searches in PubMed and Google Scholar.

Results: Exosome isolation requires the use of appropriate source fluids/supernatants, as well as qualitative and quantitative evaluation of the separated vesicles. The methodological procedures are divided into three sections: (1) pre-isolation procedures aimed at obtaining exosome-containing fluids, with a focus on protocols for organ explants and cell cultures; (2) an exosome isolation procedure with several gradient options; and (3) post-isolation procedures aimed at estimating the purity and yield of the exosomal fraction. Physical, chemical/biochemical, and compositional analyses were performed on the isolated vesicles. Nanoparticle tracking analysis, dynamic light scattering, electron microscopy, and adjustable resistive pulse sensing are used in physical analysis to determine particle size and concentration

Conclusion/Significance: This Review is significant because it emphasizes the vital biological and pathobiological functions of exosomes produced from stem cells, as well as strategies for detecting them in stem cell cultures. This review contributes to the field of stem cell medicine by demonstrating methodological ways for separating cell-free therapeutic agents from stem cell cultures, which are seen as a promising option in regenerative medicine.

Biography

He worked on Stem Cells, Blood Grouping, and Cryopreservation. Doctor in a Sparsh Hospital, Bangalore, India.

Received: October 15, 2022; **Accepted:** October 17, 2022; **Published:** November 30, 2022
