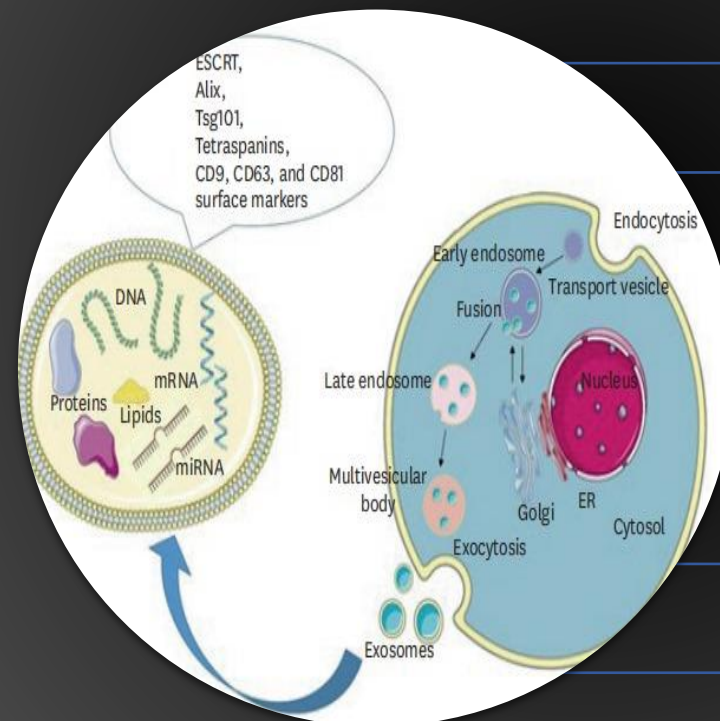


EXOSOMAL CONTRIBUTIONS TO REGENERATIVE ENDODONTICS CURRENT INSIGHTS

What are Exosomes ??

- Lipid-bilayered cell-derived membranous vesicles of nanoparticle scale (40-160 nm)
- Produced through **multivesicular exocytosis** by almost all cells
- Extensively present in body fluids such as **plasma, serum, urine, saliva, breast milk**
- They transport various biomolecules including **nucleotides, microRNAs (miRNAs), proteins, and lipids.**

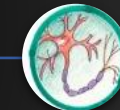
Role of Exosomes in regulating dentin-pulp complex regeneration



ODONTOGENESIS



ANGIOGENESIS



NEUROGENESIS



BONE REGENERATION



ANTI-INFLAMMATION



IMMUNO MODULATION

THROUGH

- Cell-cell communication
- Signal transduction
- Immune response modulation
- Antigen presentation
- Epigenetic reprogramming of recipient cells

Exosomes derived from **DPSCs, SHEDs, SCAPs** showed dental pulp like tissue regeneration both in vitro and in vivo

1. Ultracentrifugation
2. Size-based isolation techniques
3. Immunoaffinity capture-based techniques
4. Exosome precipitation
5. Microfluidic-based isolation techniques

How to isolate Exosomes?

