

29<sup>n</sup>exentury · Skinovation

# Exosome (EXO-100B)

Precision Anti-Aging Biological Carrier

ISO 9001



## Unravelling Exosomes

Exosomes are naturally occurring extracellular vesicles secreted by cells, typically 30 to 150 nm in size. These tiny vesicles serve as crucial mediators of intercellular communication within the body. As nanoscale carriers, exosomes load and deliver specific biological information in response to their surrounding environment. Their cargo includes deoxyribonucleic acid (DNA), messenger RNA (mRNA), microRNA (miRNA), functional proteins, and more.

Owing to its lipid bilayer membrane, structurally identical to the cell membrane, exosomes ensure a secure transport system that encapsulates and protects signaling molecules

during targeted delivery. Through these bioactive components, exosomes actively regulate the surrounding microenvironment, efficiently orchestrate cell-to-cell communication, and optimize cellular activity. Exosomes offer three main perks: accelerated tissue renewal and regeneration, enhanced immune modulation, and inhibition of inflammation.

Due to its outstanding properties, exosomes are widely utilized across the following applications:

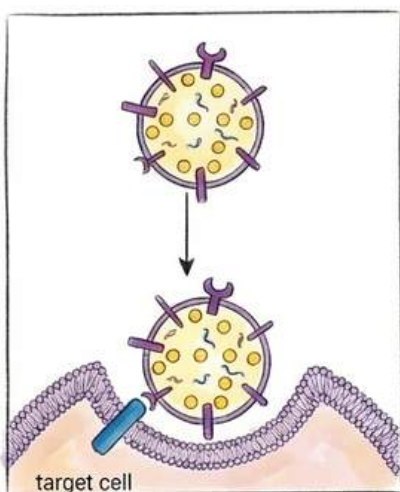
- Biological transport vehicles
- Targeted therapies
- Disease diagnostics
- Immune modulation
- Tissue regeneration



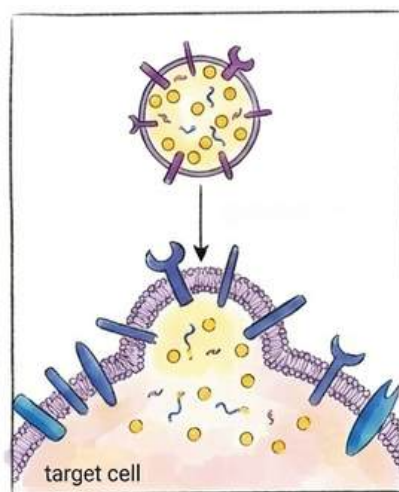
Thanks to these inherent advantages, exosomes have emerged as a novel foundation in regenerative medicine, immunotherapy, and anti-inflammatory strategies. The scientific community continues to expand the scope of exosome-based regenerative applications. Cardiomyocyte proliferation, suppression of tissue fibrosis, neuronal regeneration, and the targeted transport of specific proteins across the blood—brain barrier (BBB) for effective delivery to the brain have become prominent areas of investigation in recent years. Overall, the application of exosomes has shown promising and sustained growth in recent years.

The efficacy of exosome therapy relies heavily on how these biological messengers communicate with your cells. Exosomes deliver biological messages into recipient cells through several mechanisms, primarily endocytosis, direct membrane fusion, and receptor-ligand interactions.

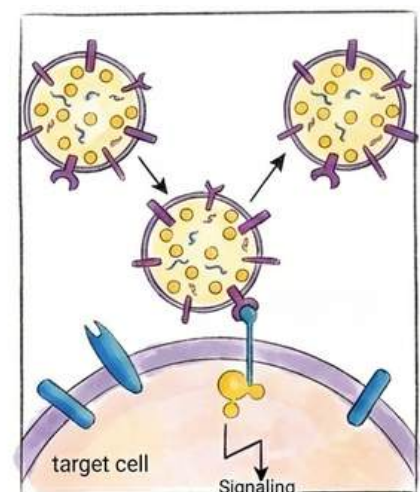
Endocytosis occurs when a recipient cell engulfs (swallows) the exosome, folding its membrane to “swallow” the exosome. This creates a protected space where the bioactive cargo is successfully released from the exosome to initiate the desired cellular activities. Alternatively, exosomes may undergo direct membrane fusion, where their outer shell merges with the cell’s membrane, releasing their contents directly into the cell. Finally, receptor-ligand interactions allow exosomes to “dock” onto specific surface markers found on the recipient cells, much like a key in a lock mechanism. This ensures the exosome interacts with the target cell only and is pulled inside the recipient cell.



Endocytosis



Direct membrane fusion



Receptor-ligand interactions

The efficacy of exosome application in healing damaged brain neural tissue has been proven with promising experimental results. After isolation, exosomes are sequenced and analysed to identify biomarkers essential for disease diagnosis. Engineered exosomes can be loaded with therapeutic contents to bypass the blood-brain barrier (BBB), entering peripheral circulation and reaching the central nervous system and releasing the bioactive contents to facilitate neural repair.

This novel process represents a promising avenue in treating distinct neurological conditions. Hence, this innovative therapy is recommended for patients suffering from neuroinflammation and oxidative stress. It helps patients improve from neurological-related symptoms, including Alzheimer's disease, Parkinson's disease, and stroke.



Damaged Cell Regeneration



Beauty & Skincare



Hair Follicle Cell Proliferation



Targeted Wellness Therapy

Moreover, exosomes exhibit outstanding features that enhance skin health and aesthetics, including but not limited to:

- Prevents the Formation of Fine Lines, Nasolabial Folds, Crow's Feet, Neck Lines, and Other Wrinkles
- Enhanced Skin Elasticity & Firmness
- Stimulate Cellular Regeneration
- Hydrates the Skin to Achieve an Ideal Complexion.
- Anti-Inflammatory Modulation
- Scar Prevention
- Promotes Collagen and Elastin Synthesis
- Follicular Regeneration
- Slows Down the Progression of Aging



Post-Treatment Skin Enhancement

Exosomes have demonstrated exceptional efficacy in both in vitro (cell) studies and human applications, particularly regarding pigmentation reduction, skin brightening, lifting, firming, and accelerated repair.

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