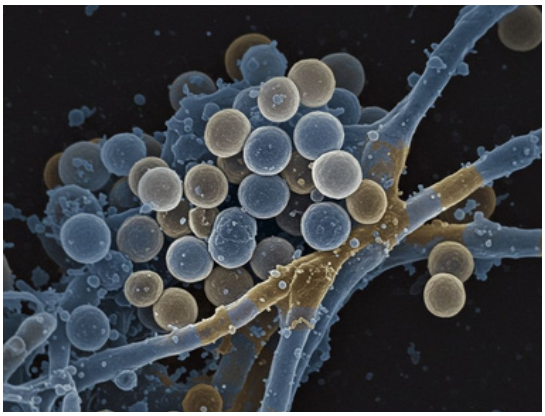
CENTELLA ASIATICA EXOSOME Code: EXO-4



Definition: Exosomes are small, nanometer-sized extracellular vesicles secreted by cells. They act as messengers, transporting proteins, nucleic acids, and other molecules to other cells. They play a crucial role in intercellular communication and various biological processes. They are generated from late endosomes, which are intracellular compartments, through a process called multivesicular body (MVB) formation. Intraluminal vesicles form in the lumen of the endosome and subsequently fuse with the cell membrane to be released as exosomes.
Exosomes are not simple empty sacs; they contain various molecules, such as proteins, lipids, nucleic acids (mRNA, miRNA, etc.), and metabolites.

Cosmetic properties: Centella asiatica exosomes, derived from the plant, offer significant cosmetic benefits thanks to their ability to release active compounds more effectively than traditional extracts. They possess antioxidant and free radical-scavenging properties. They promote skin repair and regeneration, as well as their anti-aging effects by stimulating fibroblast proliferation, improving collagen synthesis, and reducing oxidative stress. Furthermore, they can improve skin hydration, elasticity, and overall texture, while contributing to the healing of various skin conditions.
The active components of Centella asiatica, such as asiaticoside and madecassoside, are known to promote collagen synthesis and wound healing. When encapsulated in exosomes, these compounds can penetrate deeper into the skin, enhancing their regenerative effects.
Exosomes can help delay photoaging by inhibiting pathways that lead to collagen degradation and utilizing exosomal microRNAs to counteract UV-induced damage. Skin barrier repair.
They strengthen the skin barrier, improving its ability to retain moisture and protect against external aggressions. This is achieved through the synergistic action of triterpenes and exosomal nucleic acids.
By modulating cell cycle proteins and delivering regenerative molecules, exosomes can promote wound healing and reduce scar formation.

References:

1 Centella asiatica Tissue Culture-Derived Extracellular Vesicles: A Multifaceted Approach to Skincare Applications
Tsong-Min Chang, Chung-Chin Wu, Huey-Chun Huang, Shr-Shiuan Wang, Ching-Hua Chuang, Pei-Lun Kao, Wei-Hsuan Tang, Luke Tzu-Chi Liu, Wei-Yin Qiu, Ivona Percec, Charles Chen, Tsun-Yung Kuo.

2 Evaluation of Effects on Skin Quality of a Centella asiatica Extracellular Vesicle-based SkinCare Formulation: A 28-Day Facial Skin Quality Study Tsong-Min Chang Department of Applied Cosmetology, HungKuang University, Taichung City, Taiwan Chung-Chin Wu Schweitzer Biotech Company, Taipei City, Taiwan Huey-Chun Huang Department of Medical Laboratory Science and Biotechnology, China Medical University, Taichung City, Taiwan Shr-Shiuan Wang Department of Applied Cosmetology, HungKuang University, Taichung City, Taiwan Ching-Hua Chuang Schweitzer Biotech Company, Taipei City, Taiwan Pei-Lun Kao Schweitzer Biotech Company, Taipei City, Taiwan Wei-Hsuan Tang Schweitzer Biotech Company, Taipei City, Taiwan Luke Tzu-Chi Liu Schweitzer Biotech Company, Taipei City, Taiwan Wei-Yin Qiu Department of Clinical Application, Center for iPS Cell Research and Application (CiRA), Kyoto University, Kyoto, Japan Ivona Percic Division of Plastic Surgery, Department ofSurgery, University of Pennsylvania,Philadelphia, PA, USA Charles Chen Schweitzer Biotech Company, Taipei City,Taiwan Tsun-Yung Kuo

CENTELLA ASIATICA EXOSOMES

CODE: EXO-4 Date of last amendment: 22.03.2025

INCI name: CENTELLA ASIATICA LEAF EXTRACT (AND) CENTELLA ASIATICA LEAF VESICLES (AND)PROPANEDIOL (AND) SODIUM LEVULINATE (AND) XANTHAN GUM (AND) POTASSIUM SORBATE.

Description: Centella Asiatica extract enriched with exosomes isolated by ultra-filtration of said concentrated extract and stabilized in a natural xanthan gum fluid gel.

Properties: Activates collagen production and accelerates skin repair. Ideal for anti-aging, moisturizing, and sensitive skin formulations. It has decongestant, moisturizing, and antioxidant properties.

COMPOSITION (INCI NAME)	% (Weight)	CAS #
Centella Asiatica Leaf Extract (and) Centella Asiatica Leaf Vesicles	94,150	84696-21-9 (and) ---
Xanthan Gum	0,300	11138-66-2
Preservatives:		
Propanediol	5,000	504-63-2
Sodium Levulinate	0,400	19856-23-6
Potassium Sorbate	0,150	24634-61-5

Concentration of Exosome Particles	Greater than 10 billion particles/ml. Measurement method: NTA (Nanoparticle Tracking Analysis). Equipment: Nanosight NS300 (MALVERN PANALYTICAL, U.K.)
Particle size	30 nm -500 nm (NTA Method: Nanoparticle Tracking Analysis)
Extraction method	Ultra-Filtration.
Net surface charge of the particle	Negative.
Aspect	Semi-translucent to opalescent fluid gel.
Color	Brown.
Odor	Pleasant.
pH	4,00 – 6,00 (25ºC) (USP XLIV and sub. updates).
Density	0,980 – 1,050 (pycnometer) (20ºC) (USP XLIV and sub. updates).
Dry residue	3 gr % minimum (0,5 gr. 1 hour 110° C).
Microbiological control:	Mesophilic bacteria: less than 100 CFU/gr. Moulds & yeast: less than 20 CFU/gr. No pathogens.
Observation	The product may form flocs or precipitates after long periods of storage. These are easily dispersed with gentle agitation.

Keep refrigerated (5-15°C). Do not freeze. Protect from light. Shake before use.

EXTERNAL COSMETIC USE