COSMO BIO CO., LTD.

Extracellular Vesicles derived from *Kloeckera apiculata* 180926-3 strain

Cat. No. YSEV-R4

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【 I 】Introduction

Exosomes released by cells in multicellular organisms are a type of extracellular vesicles (EVs). They are expected to be applied in pharmaceuticals and cosmetics, and developments are underway in various fields. Meanwhile, similar EVs are also released from unicellular microorganisms, which are spherical structures ranging from 20 to 400 nm. These EVs are involved in inter-microbial and microbe–host cell communication, similar to exosomes.[1] EV production is an essential function for microorganisms, and elucidating the roles of EVs in bacterial interactions or host interactions is expected to lead to applications in vaccine development, gut microbiota research, and drug delivery systems (DDS).[2]

Yeasts, which are unicellular fungi, have also been reported to produce EVs, and it has been suggested that they are involved in the transport of various bioactive substances.[3-5] *Kloeckera apiculata* is a lemon-shaped yeast that assimilates only glucose and is known to be active during the initial stages of wine fermentation. It is also known for producing high amounts of volatile acids (acetic acid). This product is EVs purified from the culture supernatant of the *Kloeckera apiculata* 180926-3 strain using ultrafiltration. ※

※ The strain *Kloeckera apiculata* 180926-3 was independently isolated, cultured, and identified from plant materials and local food ingredients by Professor Akihiro Yamaguchi, Ms. Kurumi Kameda, and laboratory members at the Laboratory of Applied Microbiology, Rakuno Gakuen University.

【II】Product Information

COSMO BIO CO., LTD (CSR)

Cat. No.	Description	Quantity	Particle Concentration	Storage
YSEV-R4	Extracellular Vesicles derived from *Kloeckera apiculata* 180926-3 strain	200 µL	$> 1 \times 10^{10}$ particles/mL in PBS Filter sterilized	4℃

Note: Particle number varies by lot. Please refer to the attached CoA.

【III】Usage

- Sterilized with a 0.22 µm membrane filter.
- Dilute with appropriate buffer or medium (10 × –2000 ×) according to your experiment.
- Store at 4℃ : use as soon as possible after opening.

【IV】Reference Data

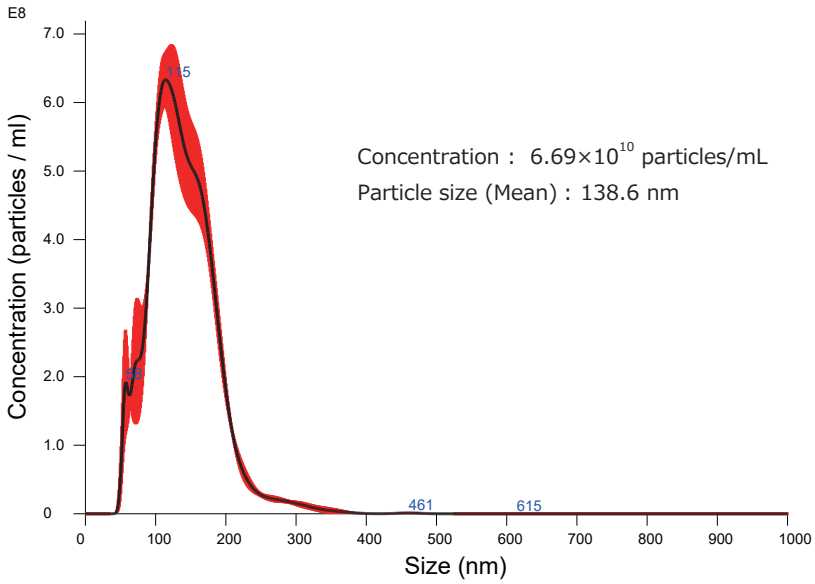

Figure 1. Particle size distribution of EVs derived from *Kloeckera apiculata* 180926-3 strain

【V】References

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4. Zhao, K. et al. Extracellular vesicles secreted by Saccharomyces cerevisiae are involved in cell wall remodelling. *Commun. Biol.* **2**, (2019).
5. Rizzo, J., Rodrigues, M. L. & Janbon, G. Extracellular Vesicles in Fungi: Past, Present, and Future Perspectives. *Front. Cell. Infect. Microbiol.* **10**, (2020).

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