

## Organic Myexosome®: A Triple Holistic Blend of Coffee, Ginseng, and Ginkgo Epden's as a functional food supplement for the prevention of Alzheimer's and Dementia

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**Received date:** September 20, 2024; **Accepted date:** September 28, 2024; **Published date:** January 11, 2025

**Citation:** Cenan Öztürk, et al. Organic Myexosome®: A Triple Holistic Blend of Coffee, Ginseng, and Ginkgo Epden's as a functional food supplement for the prevention of Alzheimer's and Dementia, IJNBD @PubScholars Group 2025; 1(1): 1-2

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### ABSTRACT

This study introduces MyExosome®, an innovative, fully organic, and vegan supplement containing exosome-like nanoparticles (EPDENS) derived from *Coffea arabica*, *Ginkgo biloba*, and *Panax ginseng*, optimized at AYE Exocure R&D Center for Alzheimer's prevention and treatment. The formulation's neuroprotective efficacy has been validated in in-vitro, in-vivo, and clinical studies. Physicochemical tests on MyExosome® capsules revealed a pH of  $5.96 \pm 0.1$ , a refractive index of 1.35, and stable zeta potential across varying pH levels. UV/Vis spectrum analysis identified absorption peaks between 250-350 nm, confirming its stability. These findings position MyExosome® as a promising neuroprotective agent for combating neurodegenerative diseases.

### Objective

This study aims to present the formulation of MyExosome®, an innovative, fully organic, and vegan functional food supplement containing orally consumable EPDEN's (edible plant-derived exosome-like nanoparticles), designed to combat and preventive Alzheimer's disease and dementia. This formulation is produced using EPDEN's derived from organic *Coffea arabica* seeds, organic *Ginkgo biloba* leaves, and organic *Panax ginseng* root-rhizomes, all of which are known for their neuroprotective properties. The isolation of these nanoparticles and the formulation of MyExosome® were optimized at the AYE Exocure R&D Center. MyExosome®'s preventive and

therapeutic effects against Alzheimer's have been proven in in-vitro (Alzheimer's model and microglial cells), in-vivo (Alzheimer's model rats), and clinical studies conducted by AYE Exocure. Our goal is to enhance the stability, selectivity, sensitivity, and specificity of these nanoparticles, providing an effective support to slow down or prevent the progression of neurodegenerative diseases.

### Method

A randomly selected capsule of MyExosome® was diluted with water at specific ratios and subjected to a series of physicochemical tests, including pH determination, Zeta

potential analysis, and UV/Vis full-spectrum scanning. In addition to determining the pH level of the stock product, four different pH levels were prepared using hydrochloric acid and sodium hydroxide, followed by zeta potential analyses for each. UV/Vis full-spectrum scanning was performed in the 200-800 nm wavelength range.

## Results

The pH level of the stock solution, prepared at a concentration of 1 mg/ml, was measured as  $5.96 \pm 0.1$ . Additionally, the refractive index of the product was determined to be 1.35. Zeta potential analysis graphs are provided in Figure 1. The zeta potential analyses confirmed the stability of the product at different pH levels and provided critical insights into the surface charge of the nanoparticles. The spectrum analysis identified potential absorption peaks corresponding to three specific molecules in the 250-350 nm range (Figure 2).

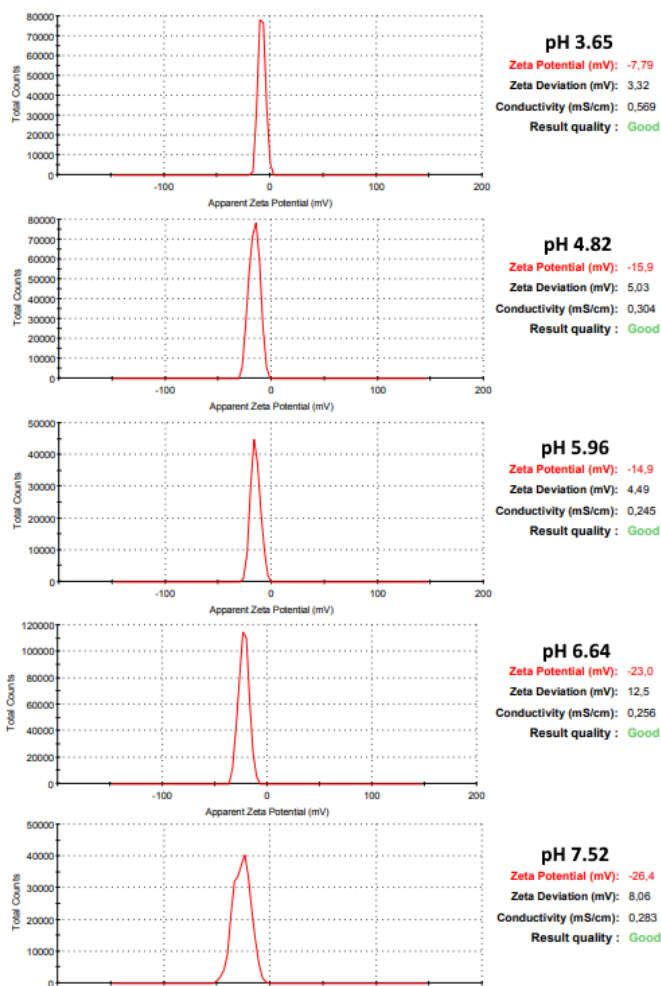


Figure1. Zeta potential analysis

## Discussion

The Zeta potential and Spectrum scanning analysis were conducted by Hacettepe University, and the results demonstrated that MyExosome® possesses the desired physicochemical stability and exhibits significant potential as a neuroprotective agent. This innovative approach offers an alternative supportive treatment and preventive option in the fight against neurodegenerative diseases such as Alzheimer's and dementia.

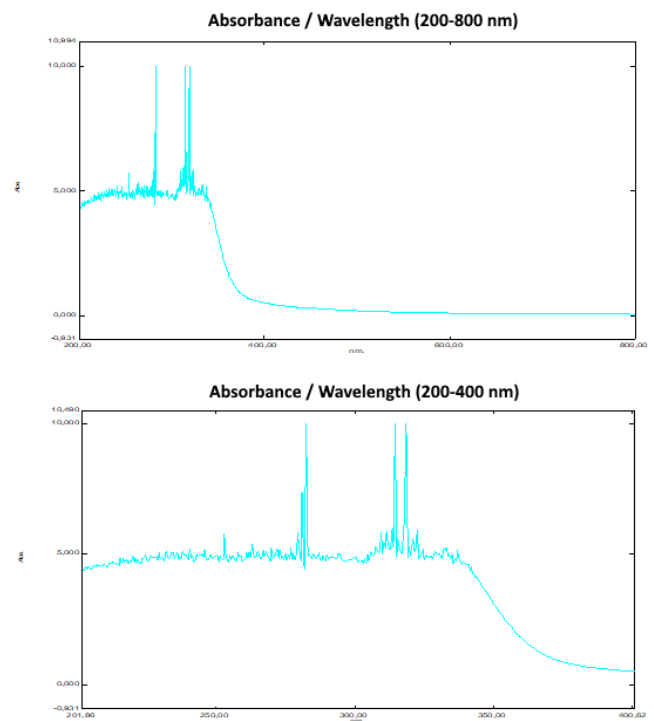


Figure2. Full spectrum analysis

### Biography of the presenting author

Cenan Öztürk completed his undergraduate studies in Molecular Biology and Genetics at Necmettin Erbakan University, Turkey, followed by a master's degree in Biotechnology at Selçuk University. He worked for over two years as a Molecular Biologist at the Turkish Health Institutes. Currently, he is researching the therapeutic and preventive effects of plant exosomes on diseases at AYE Exocure inc. Additionally, he is pursuing his PhD in Biology at Ankara University.