Aloe vera Exosomes from Leaves

A778178

Storage at -80°C (12 months). Avoid freeze/thaw cycle.

Introduction:

1. Aloe vera Exosomes from Leaves is a new resource aloe variety that serves as a medicine, food, and cosmetic. Its juice contains a wealth of active nutrients such as aloe polysaccharides, amino acids, organic acids, bioactive enzymes, natural vitamins, minerals, and anthraquinones. It is often used in the fields of cosmetics and medical aesthetics, with effects such as promoting fibrin growth, collagen synthesis, and scavenging free radicals in the body. Similarly, exosomes derived from this plant have been reported in many studies to possess antioxidant and repair-promoting properties. Therefore, the use of Aloe vera exosomes in research on disease treatment, regenerative repair, and the development of new therapeutic schemes has broad application prospects.
2. This product is exosomes obtained through separation and purification from Aloe vera extracts, and can be used in studies such as experimental control, direct loading and targeted modification, and tissue repair.

Product Specifications:

Name	Aloe vera Exosomes from Leaves
Specifications	1E+10 Particles/EA
Appearance	White Powder
pH	7.0
Aseptic Testing	Aseptic
Total Protein Concentration	(BCA)
Purity	≥90%

Product Advantages:

1. Strict quality control standards: Multiple quality control analyses are conducted, with stringent standards for various aspects including concentration and purity.
2. Comprehensive characterization results: Exosome raw material products are characterized in three dimensions in accordance with the MISEV2018 guidelines, namely electron microscopic morphology, particle size and particle distribution, and Western Blot (WB) with three positive and one negative protein markers.
3. Wide range of application scenarios: It can be used as a control in experimental procedures and functional experiments; it is applicable to engineering modifications such as targeted modification and molecular loading, as well as the development of exosome therapeutic products.

Case Presentation:

1. NTA detection of exosome particle size distribution and particle concentration:

Shake and disperse the obtained exosomes evenly, dilute them to an appropriate multiple with PBS, mark the sample name and dilution multiple, and complete the dilution preparation of the sample; before testing the sample, test the diluent first: absorb 200μL of diluent with a pipette for on-machine detection, and confirm that the components and instruments are in normal operation; after the measurement of the diluent is completed and the test result is normal, start testing the sample, take 200μL of the diluted sample for on-machine detection; stop the test when the number of counted particles reaches more than 100, export the data results, and complete the sample detection.

2. Observation of exosome morphology by TEM:

Resuspend exosomes in 50-100μL of 2% PFA. Add 5μL of the mixed suspension to a Formvar carbon-coated copper grid; alternatively, drop 5-10μL of the mixed suspension onto a piece of parafilm and place the copper grid with the Formvar film facing down on the suspension. Prepare 2-3 copper grids for each sample. Add 100μL of PBS onto the parafilm. Use tweezers to place the copper grid (with the Formvar film facing down) on the PBS droplets for washing (during all steps, keep the Formvar film surface moist while the other surface remains dry). Place the copper grid on 50μL of 1% glutaraldehyde droplets for 5 minutes. Wash the copper grid on 100μL of ddH_2O 8 times, 2 minutes each time. Place the copper grid on 50μL of uranyl oxalate droplets (pH 7.0) for 5 minutes. Place the copper grid on 50μL of methyl cellulose droplets for 10 minutes, operating on ice. Put the copper grid on the stainless steel ring at the top of the sample stage and blot off excess liquid with filter paper. Air-dry for 5-10 minutes. Place the copper grid in the sample box and take electron microscope photos at 80kV.

3. Western Blot Detection of Exosome Markers (Three Positive and One Negative):

Add the isolated and purified exosomes to the lysis buffer (E778170). After lysis, aspirate the supernatant and dilute the sample to an appropriate concentration according to the measured protein concentration. Add 4×LDS loading buffer (T466588) to the lysis buffer, boil at 95°C for 5 minutes, and perform a quick centrifugation after cooling to room temperature. Loading: Load all 15μL of the sample into the lane, and add markers at the start and end of the sample lanes. Electrophoresis: 190V for 70 minutes. Activate the PVDF membrane with methanol 10 minutes in advance. Membrane transfer: The transfer buffer needs to be pre-cooled in advance, 275mA for 70 minutes. Blocking: Prepare 1% BSA in TBST solution and block at room temperature for 1 hour. Primary antibody incubation: Incubate overnight at 4°C on a shaker; dilute the antibody with 1% BSA in TBST solution. Membrane washing: Wash three times with 1×TBST, 10 minutes each time. Secondary antibody incubation: Dilute the antibody with 1% BSA in TBST solution, and incubate on a shaker at room temperature for 1 hour. Membrane washing: Wash three times with 1×TBST, 10 minutes each time. Exposure and photography.

Precautions and Disclaimer:

This product is limited to scientific research use by professional personnel. It must not be used for clinical diagnosis or treatment, nor for food or drugs.