Absolute Mag™ Streptavidin Magnetic Particles, 200-500 nm

Cat.No: WHM-N036

DESCRIPTION

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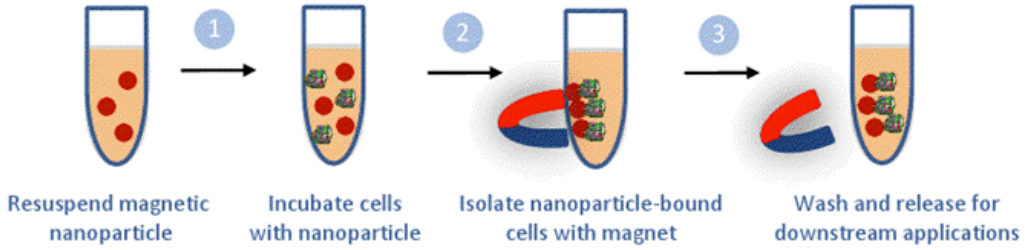
Absolute Mag™ Streptavidin Magnetic Particles can universally bind to any biotinylated biomolecules (ex. antibody, protein, peptide, DNA) through high affinity interaction between streptavidin and biotin. The Absolute Mag™ Streptavidin-biotin-biomolecule complex can be easily separated from unbound biotin-biomolecule using a magnet. This provides a quick and neat way to tag biomolecules with magnetic particles. The purified magnetic particle-biomolecule complex can be used in a variety of downstream bio-separation processes (ex. protein purification, immunoprecipitation, cell isolation or depletion, and molecular detection.)

Absolute Mag™ Streptavidin Magnetic Particles are ideally used together with bitoin antibody for isolation of cells (e.g. CTCs, stem cells) from a mixture of cell population obtained from tissues or organs. The isolated cells are viable and can be further cultured or used for downstream molecular analysis such as mRNA isolation and RT-PCR. Cell separation with Absolute Mag™ magnetic particles eliminates the use of columns, so cells are not exposed to the mechanical stress from passing through the column matrix. Magnetically separated cells are highly purified and retain their viability, ideal for downstream applications.



KIT COMPONENTS

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Absolute Mag™ Streptavidin Magnetic Particles are provided in phosphate buffered saline (PBS) containing 0.05% NaN_3, 0.1% BSA, pH 7.4. Each vial contains 1 ml of solution with particle concentration of 2 mg/ml, which is enough for binding 50 µg of biotin-antibody.

Cat# WHM-036K further includes:

- Washing Buffer
- Antibody Binding Buffer.

STORAGE

Storage Condition

All materials except the magnet should be stored at 4°C. When stored as specified the product is stable for six months.

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GENERAL PROTOCOL

Cell Enrichment

This protocol provides a general guidance for binding to biotin-antibody and then enriching 10^5 cells using Absolute Mag™ Streptavidin Magnetic Particles. Please adjust the amount of reagents for specific application.

1. Gently vortex or pipette the Absolute Mag™ streptavidin magnetic particles in the vial before use.
2. Aliquot 20-50 µl magnetic particle solution for enrichment experiment. Mannetically separate the nanoparticles from the solution by placing the magnet on the siade of the tube for 1-2 min and remove the supernatant carefully(with magnet still on the side).
3. Wash magnetic particle with 200 µl of Washing Buffer once. Magnetically separate the particles from the solution by placing the magnet on the side of the tube for 1-2 min and remove the supernatant carefully. Re-disperse nanoparticles in 40-100 µl of Antibody Binding Buffer.
4. Add 1-2.5 µg biotin-conjugated antibody (in a volume of 100- 200 µl) to the particle and incubate for 30-60 minutes on a rotator.
   Note: *20 µl magnetic particles could bind ~1 µg of antibody.*
5. Wash magnetic particle-antibody conjugates with 200 µl Washing Buffer twice to remove unbound antibody.
6. Resuspend the magnetic particle-antibody conjugates in Washing Buffer (50 µl) and add it to the cell sample to a total volume of 0.1-0.5 ml.

   Example Application for Cell Separation and Enrichment:

   Note: *20-50 µl of nanoparticle sample is generally sufficient for the enrichment of 1-10x10^5 cells. Cell capture efficiency can be affected by factors such as frequency of target cells in the cell population, density of antigen/epitope expressed on the cell surface, and the antibody affinity. Adjust the amount of nanoparticles accordingly.*
7. Incubate the particles with the cell sample on an orbital shaker for 30 minutes at room temperature.
8. After incubation, use a magnet to separate the particles (with bound cells) from the solution, and carefully remove the supernatant.
9. Wash the magnetic particle-cell complex with 500 µl cell culture medium twice.
10. Isolated cells can be re-suspended in cell culture medium for downstream applications.