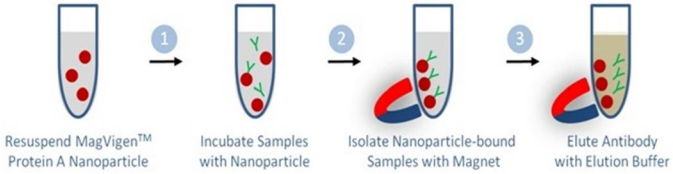
MagVigen™ Protein A Nanoparticles

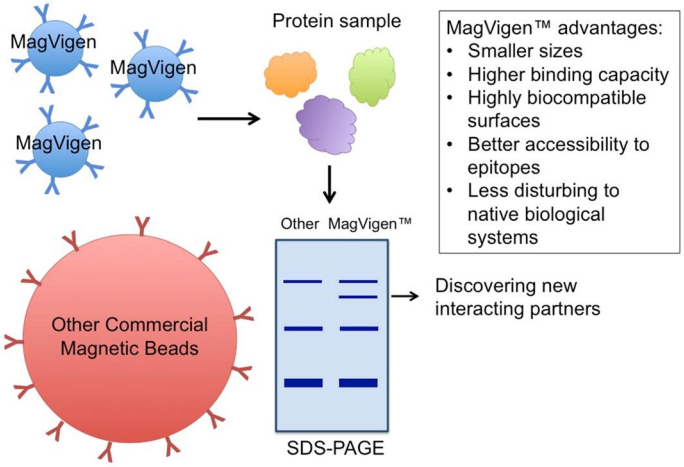
Cat# 21003/K21003

Product Description

MagVigen™ Protein A nanoparticles are ideal for antibody purification and immunoprecipitation assays. MagVigen™ Protein A nanoparticles recognize and efficiently bind to the Fc part of immunoglobulin (Ig) following a short incubation. The generated nanoparticle-antibody complex can be separated from the rest of the sample by magnet. The retained antibody can be eluted from the nanoparticles using an elution buffer.



MagVigen™ nanoparticles enable identification of new protein-protein interactions through immunoprecipitation assays, where the MagVigen™ Protein A-antibody complex can be used to isolate particular proteins of interest or protein complex from assay samples, e.g. cell lysate. The immunoprecipitated proteins can be further analyzed by electrophoresis, protein staining, and mass spectrometry. MagVigen™ nanoparticles are much smaller than conventional micro-beads. This feature allows for better accessibility of the nanoparticles to the antigenic epitope and for less disturbance to the native functions of proteins or protein-protein complexes. In addition, the surfaces of MagVigen™ nanoparticles are uniquely coated to reduce non-specific interactions with cellular proteins and other biomolecules. This feature allows for a more specific "pull down" of real protein complex targets.



Product Contents

- Cat# 21003: MagVigen™-Protein A nanoparticles are provided in phosphate buffered saline (PBS) containing 0.05% NaN3, 0.01% Tween 20. pH 7.4.
  Each vial contains 1 ml of solution with a particle concentration of 4 mg/ml, which is enough for approximately 20-200 antibody enrichment or immunoprecipitation assays.

Cat# K21003 further includes:

- Washing Buffer
- Elution Buffer

All materials should be stored at 4°C. Shelf life: 6 months.

Protocol

Nanoparticle Wash

For optimal results from the nanoparticles, it is recommended that the nanoparticles are washed prior to addition to samples.

1. Vortex MagVigen™ nanoparticles for 10-20 seconds.
2. Take 50µl of nanoparticle solution, add it to 100µl 1X Washing Buffer, and vortex to mix.
3. Separate the nanoparticles from the solution by placing the magnet on the side of the tube for 2-5 min and remove the supernatant carefully (with magnet still on the side).
   Note: *A clear precipitate containing dark brown colored nanoparticles should become visible on the side of the micro-centrifuge tube*.
4. Wash nanoparticles 2 times

Immunoprecipitation

5. Preclear cell lysate:
   Add 50µl of MagVigen™ nanoparticles into 500µl of cell lysate and incubate on ice for 30min.
6. Separate the nanoparticles from cell lysate by placing the magnet on the side of the tube for 2-5 min and collect the supernatant carefully and transfer to a new tube.
   Note: *A clear precipitate containing dark brown colored nanoparticles should become visible on the side of the micro-centrifuge tube.*
7. Add 5µg of antibody (or recommended amount following company protocol) to the tube containing precleared lysate.
8. Incubate on ice for an hour.
9. Add 50µl of MagVigen™ nanoparticles to the tube. Rotate for 2 hours at 4°C.
10. Separate the nanoparticles from sample solution (cell lysate) with magnet. Remove supernatant.
11. Wash the nanoparticles 3 times with 50µl of lysis buffer used.
12. After the last wash, remove the supernatant and add 100µl of elution buffer to the beads.
13. Vortex and incubate for 5 minutes.
14. Magnetically separate nanoparticles from the solution. Collect supernatant while avoiding disturbing the bead pellet. The target proteins are in the supernatant and ready to be analyzed