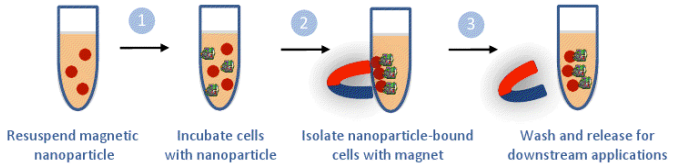
MyQuVigen™ - anti-mouse IgG, emi 635 nm

(Cat#41007) v.1810101

Product Description

MyQuVigen™ nanoparticles are unique combination of superparamagentic iron oxide and quantum dots providing high magnetic moment and bright stable fluorescence, ideal for controllable magnetic manipulation with extensive, multiplexed fluorescence imaging. MyQuVigen™-anti-mouse IgG fluorescent magnetic nanoparticles (emi 635 nm) can universally bind to mouse IgG. Their maximal fluorescence emission is at 635 nm when excited at 488 nm or shorter wavelength. MyQuVigen™-anti-mouse IgG fluorescent magnetic nanoparticles or the downstream complex is easy to be separated using a magnet.

MyQuVigen™-anti-mouse IgG magnetic nanoparticles (emi 635 nm) are ideally used together with mouse antibody for isolation or labeling of cells (e.g. CTCs, stem cells) from a mixture of cell population obtained from tissues or organs. The isolated cells are tagged with strong fluorescence and can be directly applied for microscope imaging or other fluorescence-based cell analysis. The isolated cells are also viable and can be further cultured or used for downstream molecular analysis such as mRNA isolation and RT-PCR. Cell separation with MyQuVigen™ nanoparticles 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.



Advantages of MyQuVigen™-anti-mouse IgG magnetic nanoparticles for cell selection/labeling

- Easy and quick to make nanoparticle-primary mouse antibody conjugates
- Simple and gentle cell separation
- Strong and long-lasting fluorescent signal
- Consistent, high quality results
- High binding capacity
- High biocompatibility
- Low non-specific binding

Product Contents

- MyQuVigen™-anti-mouse IgG fluorescent magnetic nanoparticles (emi 635 nm) (Cat# 41007) are provided in phosphate buffered saline (PBS), pH 7.4, with 0.02% BSA. Each vial contains 1 ml of solution with a particle concentration of 1 mg/ml.

  Nanoparticle size: 200-500 nm measured using Dynamic Light Scattering.

  Polydispersity index < 0.2.
- Wash buffer (15 ml)

Related Products Not Included

- Magnetic Rack, Cat# A20006.

All materials except the magnetic rack should be stored at 4°C for up to 6 months.

Protocol

Cell Enrichment

This protocol provides a general guidance for enriching 10^5 cells using MyQuVigen™-anti-mouse IgG magnetic nanoparticles (emi 635 nm). Please adjust the amount of reagents for specific application.

1. Vortex MagVigen™ nanoparticles for 10-20 seconds.
2. Take 50-100µl nanoparticle solution (for ≤10µg antibody).
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. Remove magnet and wash the nanoparticles with 100 µl 1X Washing Buffer. Repeat step 4, and remove supernatant.
5. Add 100µl sample solution containing desired antibodies to the nanoparticle pellet, mix well, and incubate with gentle rotation for 2 hours at room temperature or 4 °C overnight.
6. After incubation, use the magnet to separate nanoparticle-antibody complex from the solution and remove the supernatant.
7. Wash nanoparticle-antibody complex with 100µl Washing Buffer twice and remove supernatant to remove unbound antibody.
8. Aliquot 50-100µl nanoparticle-antibody solution and add it to the cell sample to a total volume of 0.1-0.5 ml.
   Note: *50 µl 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.*
9. Incubate the nanoparticles with the cell sample on an orbital shaker for 30 minutes at room temperature.
10. After incubation, use a magnet to separate the nanoparticles (with bound cells) from the solution, and carefully remove the supernatant.
11. Wash the nanoparticle-cell complex with 500µl cell culture medium twice.
12. Isolated cells can be re-suspended in cell culture medium for downstream applications.

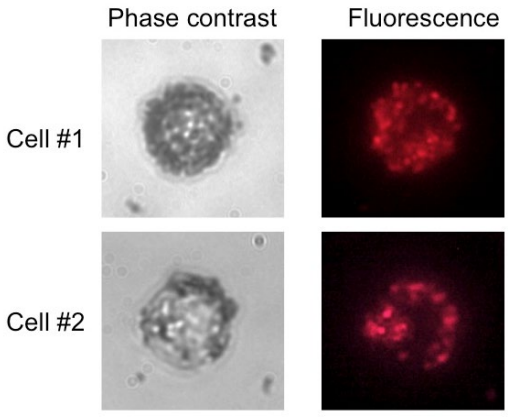


Figure 1. Representative images of PC3 cells captured by MyQuVigen™-anti-mouse IgG (emi 635 nm) using mouse-anti-human EpCAM.