invitrogen™ | DYNAL®
invitrogen bead separations

Cat. no. 120.01D

Rev. no. 006

Dynal® MPC™-1

Magnetic Particle Concentrator

PRINCIPLE

Dynal® MPC™-1 is a tool to separate Dynabeads® from diverse liquid sample matrices. The Dynabeads will be attracted to the magnet adjacent to the tube wall when the tube is inserted into the Dynal MPC-1. This enables easy removal of supernatant while the Dynabeads are left isolated in the tube. Any laboratory skilled in using conventional laboratory techniques that follow good laboratory practices may use Dynal MPC-1 for magnetic separation with Dynabeads.

PRODUCT DESCRIPTION

The Dynal MPC-1 is made from disinfectant proof polyacetate equipped with Invitrogen Dynal rare earth magnets (Neodymium-Iron-Boron permanent magnets).

The Dynal MPC-1 has been designed to hold one single tube with variable diameters (up to 30 mm) and volumes (5-50 ml).

Nominal magnetic properties

Neodymium-Iron-Boron permanent magnets

B_r (Remanence):
12,200 Gauss 1,220 mTesia

${}_bH_c$ (Coercive Force):
11,400 Oersteds 410 kA/m

${}_jH_c$ (Intrinsic Coercive Force):
17,000 Oerstedt 1,350 kA/m

BH_{max} (Maximum Energy Product):
38 x 10^6 GOe 306 kJ/m^3

The high permanent magnetic properties ensure satisfactory isolation of Dynabeads immunomagnetic beads.

WARNING

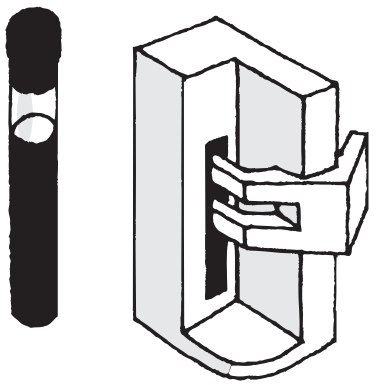
The Health and Safety Officer should take all necessary steps and full responsibility to ensure that the following precautions and statements are followed and adhered to. IN NO EVENT SHALL INVITROGEN DYNAL BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

NOTE

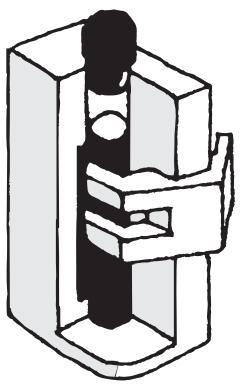
The Dynal MPC-1 should not be kept in close contact with magnetic tapes, credit cards, computer discs or other magnetic storage systems, as these can be damaged by the strong magnetic field. Also keep away from pacemakers.

INSTRUCTIONS FOR USE

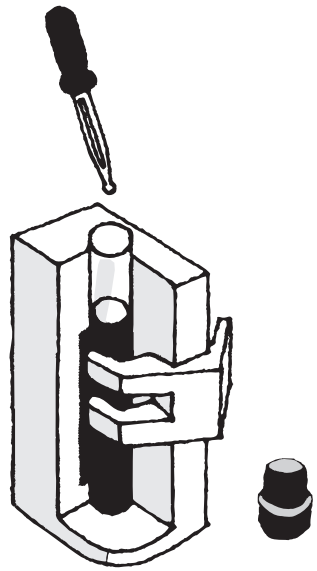
1. Dynabeads are incubated with the desired target in a test tube according to the experimental protocol.

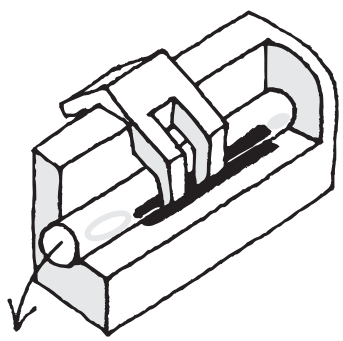


2. For magnetic separation, place the test tube in the Dynal MPC-1 and ensure that the clamp holds the tube in place.



3. Allow the test tube to remain in the Dynal MPC-1 for 1-4 minutes. During this time the Dynabeads-target complexes will be attracted to the wall of the test tube by the magnetic field. The magnetic separation may, depending on the experimental conditions, be enhanced by an extended separation time and an occasional, gentle tilting of the Dynal MPC-1 while the test tube is held in position.
4. Remove the supernatant, either by pipetting or decanting the test tube while it remains in the Dynal MPC-1. The Dynabeads-target complexes are kept on the wall of the test tube by the magnetic field.



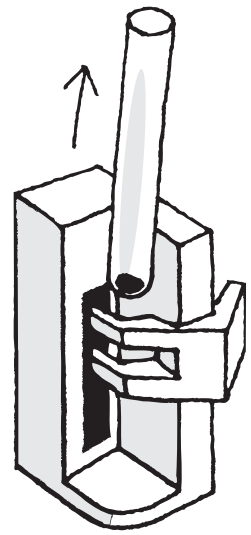


Positive isolation

5. After discarding the supernatant (step 4 above), remove the test tube from the Dynal MPC-1. Add wash solution along the wall of the test tube where the Dynabeads-target complexes are attached.
6. Place the test tube in the Dynal MPC-1 for 1-4 minutes and again remove the supernatant. Repeat the washing step according to the specific experimental protocol.
7. Discard the final wash solution and resuspend the Dynabeads-target complexes in an appropriate medium, again according to the specific experimental protocol. The Dynabeads-target complexes can be concentrated as a pellet in the bottom of the test tube by slowly sliding the tube out of the Dynal MPC-1.

Negative isolation and depletion

Magnetic separation can also be used to remove unwanted target from a heterogenous suspension. Using this approach, the bead-bound target is discarded and the untouched target of interest is recovered with a pipette (the supernatant in step 4 above).



NOTE

Immunomagnetic isolation is, as all immunological techniques, critically dependent on the specificity and the avidity of the antibodies used with the immunomagnetic beads. The Dynal MPC-1 only guarantees a satisfactory isolation of Dynabeads, not the isolation of a certain antigen or cell.

DISINFECTION

The following materials have undergone testing regimes for cleaning purposes. Spray and/or wipe the Dynal MPC-1 unit with one of the following cleaning agents:

- 70% isopropyl alcohol
- 1% sodium hypochlorite solution (Bleach)
- 0.1 M HCl solution

Other disinfectants have not been tested and may not be suitable. Avoid prolonged exposure to water or aqueous solutions.

NOTE

Do not autoclave the Dynal MPC-1.

GENERAL INFORMATION

Invitrogen Dynal AS complies with the Quality System Standards ISO 9001:2000 and ISO 13485:2003.

STORAGE AND STABILITY

Your Dynal MPC-1 contains sintered rare-earth Neodymium Iron Boron permanent magnets. Magnetic strength will not diminish significantly during the lifetime of the product. Loss of magnetic strength will occur only if the magnets are exposed to temperatures greater than 90°C. Do not leave Dynal MPC-1 exposed to UV light, as the surface material may become brittle.

Technical Support

Please contact Invitrogen Dynal AS for further technical support (see contact details).

WARNINGS AND LIMITATIONS

Handle the Dynal MPC-1 with care. The Invitrogen Dynal magnets are brittle and can be damaged with improper handling.

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Warranty

The products are warranted to the original purchaser only to conform to the quantity and contents stated on the vial and outer labels for the duration of the stated shelf life. Invitrogen Dynal's obligation and the purchaser's exclusive remedy under this warranty is limited either to replacement, at Invitrogen Dynal's expense, of any products which shall be defective in manufacture, and which shall be returned to Invitrogen Dynal, transportation prepaid, or at Invitrogen Dynal's option, refund of the purchase price.

Claims for merchandise damaged in transit must be submitted to the carrier.

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Contact details for your local Invitrogen sales office/technical support can be found at http://www.invitrogen.com/contact

Revised: 12.2010
Printed: 04.2007