Magnosphere™ MX200/Carboxyl

PRODUCT DESCRIPTION

Magnosphere™ MX200/Carboxyl beads are well-designed magnetic microparticles designed for immobilization of ligands through either physical or chemical means. The particle surfaces are covered with a JSR Life Sciences proprietary hydrophobic polymer that has charge density to maximize physical adsorption of proteins and chemical coupling through carboxy groups.

FEATURES

- Uniform particle size
- Superparamagnetic
- Rapid magnetic responsiveness
- Maximized for physical adsorption of ligands
- Maximized for chemical coupling through carboxyl surface groups

EXAMPLE APPLICATIONS

Immunoassay

SPECIFICATIONS

Package volume	5 mL
Solid content in slurry	2 % (2 x 10^9 beads/mL approx.)
Dispersion media	0.05 % Nonionic surfactant + 0.01 % ProClin 950 AI in H_2O
Bead diameter	2.2 μm (micrometer)
Bead magnetite content	35 % approx.
Surface charge density	5 nmol/mg bead approx.
Shelf life	Labeled on the bottle

*Surface charge density = amount of carboxyl groups per 1 mg beads

STORAGE

Magnosphere™ MX200/Carboxyl is stable for 24 months when stored at 2-8 °C. Do not freeze the vial. Vortex the vial or pipette gently up and down to obtain a homogeneous dispersion before.

RECOMMENDED PROTOCOLS

[Protocol I] PHYSICAL COUPLING

Reagent and equipment requirement

Binding Buffer:	50 mM MES buffer [2-(N-morpholino)ethanesulfonic acid] pH 6.2 (or other appropriate buffer, if needed)
Washing & Storage Buffer:	TBS or PBS buffer
Equipment:	Magnetic separator. Vortex tube mixer. Tube rotator.

1. Suspend the ***Magnosphere™ MX200/Carboxyl*** beads well using Vortex mixer and put 1 mL of the suspension (i.e., 10 mg beads) into a microtube.
2. Place the tube on a magnetic separator for 1 minute (or longer if needed) and remove the supernatant carefully.
3. Add 1 mL of Binding Buffer and suspend the beads by vortexing. Then, remove the supernatant as in step 2.
4. Repeat step 3 for a total of 3 times.
5. Add 1 mL of Binding Buffer and suspend the beads by vortexing.
6. Add 100 μg of antibody (100 μL, if antibody was diluted to 1 mg/mL) and suspend the beads by vortexing.
7. Keep rotating the tube with Tube rotator for 3 hours at room temperature.
8. Remove the supernatant as in step 2.
9. Wash the beads using 1 mL of Washing Buffer and suspend the beads by vortexing.
10. Remove the supernatant as in step 2.
11. Repeat steps 9 & 10 for a total of 3 times.
12. Suspend the beads with desired buffer suitable for downstream applications and store at 2-8 °C until needed.

[Protocol II] CHEMICAL COUPLING

Reagent and equipment requirement

Binding Buffer:	0.1 M MES* buffer pH 5.0 (*MES: 2-(N-morpholino)ethanesulfonic acid)
Washing Buffer:	TBS-T (25 mM Tris-HCl, pH 7.2, 0.15 M NaCl, 0.05 % Tween20)
Coupling Reagent	10 mg/mL EDC** in ice-cooled Binding Buffer, prepared just before the coupling reaction (**EDC: 1-Ethyl-3-[3-dimethylaminopropyl]carbodiimide Hydrochloride)
Equipment:	Magnetic separator. Vortex tube mixer. Tube rotator.

1. Suspend the ***Magnosphere™ MX200/Carboxyl*** beads well using Vortex mixer and put 500 μL of the suspension (i.e., 10 mg beads) into a microtube.
2. Place the tube on a magnetic separator for 1 minute (or longer if needed) and remove the supernatant carefully.
3. Add 1 mL of Binding Buffer and suspend the beads by vortexing. Then, remove the supernatant as in step 2.
4. Add 1 mL of Binding Buffer and suspend the beads by vortexing.
5. Add 100 μg of antibody (100 μL, if antibody was diluted to 1 mg/mL) and suspend the beads by vortexing.
6. Keep rotating the tube with Tube rotator for 30 minutes at room temperature.
7. Add 100 μL of Coupling Reagent and suspend the beads by vortexing.
8. Keep rotating the tube with Tube rotator for 3 hours at room temperature.
9. Remove the supernatant as in step 2.
10. Wash the beads using 1 mL of Washing Buffer and suspend the beads by vortexing.
11. Remove the supernatant as in step 2.
12. Repeat steps 10 & 11 for a total of 3 times.
13. Suspend the beads with a desired buffer suitable for downstream applications and store at 2-8 °C until needed.

IMPORTANT NOTICE

- This product is for research use only and not intended for therapeutic or *in vivo* diagnostic use.
- The specifications of the product may be changed without a notice.
- JSR Life Sciences Corporation does not guarantee that this product will be continuously available.
- JSR Life Sciences Corporation makes no warranties as to this product including, but not limited to, implied warranties of merchantability or fitness for a particular purpose.

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