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BcMag Epoxy-Modified Magnetic Beads

Product Description

BcMag Epoxy-modified Magnetic are uniform superparamagnetic 1 u m (or 5 u m) diameter beads with epoxy surface groups. It is widely used to covalently couple ligands containing amine, hydroxyl or thiol group. Such coupling method provides an extremely stable linkage between the ligand and the matrix.

Size: ~1 u m (or 5 u m)
Concentration: 30 mg/ml in ddH_2O

Store at 4° C DO NOT FREEZE

Protocol for Coupling of Protein

A. Buffer Preparation

Note: The ionic strengths of the coupling buffers are critical to obtain the high coupling efficiency rate. The coupling buffers should be at minimal ionic strengths, and should not contain any amino (e.g. Tris) or other nucleophiles. But the wash or storage buffers can contain amino.

1. Coupling Buffer: 0.1 M sodium phosphate, pH 8.0
Dissolve 8.62 g of sodium phosphate dibasic and 5.42 of sodium phosphate monobasic: in 800 ml ddH_2O. Adjust the final pH to 8.0 with 0.1 N HCl. Adjust the final volume to 1 L with ddH2O.

2. Storage Buffer: Phosphate Buffer saline (PBS), pH 7.4, 0.02% NaN_3

(1) potassium phosphate dibasic:	1.82 g/L
(2) sodium phosphate monobasic:	0.22 g/L
(3) sodium chloride:	8.76 g/L
(4) NaN_3	0.2 g/L

Bring to final volume of 1 L with ddH_2O. Adjust the final pH to 7.4 with 1 N HCl or NaOH.

B. Coupling to BcMag Epoxy-modified Magnetic Beads

1. Transfer 10 mg of completely suspended magnetic beads to a microcentrifuge tube. and then insert the tube into a magnetic separator. Let stand until the supernatant is clear. Aspirate the supernatant and discard

Note: Magnetic separators are commercially available from Bioclone Inc.: BcMag separator-2 for holding two individual 1.5 ml centrifuge tube, Cat. No. MS-01, BcMag separator-6 for holding six individual 1.5 ml centrifuge tubes, Cat. No. MS-02, BcMag separator-24 for holding twenty-four individual 1.5 ml centrifuge tubes, Cat.No.MS-03, BcMag separator-50 for holding one 50 ml and one 15 ml centrifuge tube, Cat. No. MS-04.

2. Wash the beads by adding 1 ml coupling buffer and resuspend the beads by vigorously shaking. Insert the tube into a magnetic separator. Let stand until the supernatant is clear. Aspirate the supernatant and discard.
3. Repeat (step 2) three times.
4. Dissolve or dilute appropriate amount of protein in 1 ml coupling buffer.

Note: Coupling efficiencies to aldehyde-modified magnetic beads depend varies from protein to protein. The user should empirically optimize the concentration of the protein. We recommend starting with 250-500 ug/ml for 10 mg of 1u m beads or 50-250 ug/ml for 10 mg of 5 u m beads.

5. Add the protein solution to the washed beads. Resuspend the magnetic beads and mix very well.
6. Incubate the reaction with continuous rotation at room temperature for 48 hours.
7. Wash beads 10 times with 1 ml of 1 M NaCl as described at step 2.
8. Resuspend the beads in storage buffer to desired concentration.
9. Store at 4° C until used.