

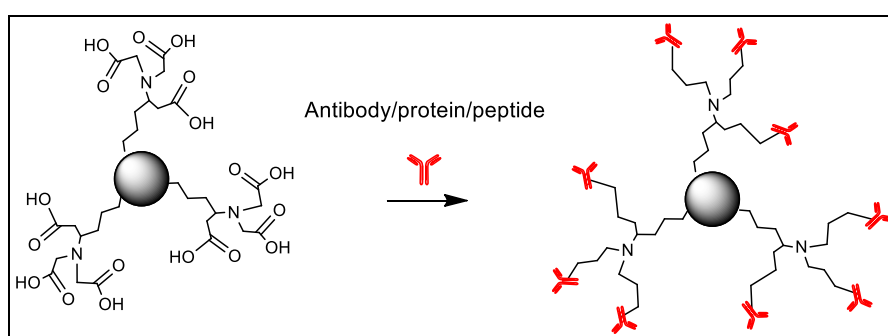
Cat. No. MF-COO-0060

# Magnetic Fluid-Carboxyl

## Product description

Magnetic Fluid-Carboxyl is magnetic bead with surface functional group  $-\text{COOH}$ . The magnetic bead consists of  $\text{Fe}_3\text{O}_4$  sphere core and dextran coating layer. Through chemical modification of dextran, the carboxyl groups ( $-\text{COOH}$ ) are joined to the magnetic beads through a short linker.

Through activation of Magnetic Fluid-Carboxyl with EDC, the ligands could be conjugated to the magnetic beads through primary amine groups such as antibody, protein, or peptide.



## Specifications

- I. Core material: Iron oxide ( $\text{Fe}_3\text{O}_4$ )
- II. Surface coating: Dextran layer
- III. Surface functional group: Carboxyl acid ( $-\text{COOH}$ )
- IV. Concentration: 8 mg-Fe/mL
- V. Mean diameter of particles: 50 ~ 60 nm
- VI. Storage buffer: Phosphate buffered saline pH-7.4 with 0.09% sodium azide.

## Additional material required

- MES Buffer (pH 6.0):  
100 mM MES and 500 mM NaCl
- PBS, pH 7.4:  
137 mM NaCl, 8.1 mM  $\text{Na}_2\text{HPO}_4$ ,  
1.47 mM  $\text{KH}_2\text{PO}_4$  and 2.7 mM KCl
- Magnetic stand: **Magstand** (MSD-01)  
for the best performance
- Quench Buffer :  
TBS, pH 8.0 **or** 5-10 mM hydroxylamine
- Desired antibody or ligand
- MES [2-(morpholino) ethanesulfonic acid],  
 $\text{C}_6\text{H}_{13}\text{NO}_4\text{S}\cdot\text{H}_2\text{O}$ , MW = 213.25,  
CAS No.145224-94-8

- Magnetic separating column
- Tilt rotation device or vortexer
- Clean battle or tubes
- Pipette
- EDC [1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride],  $C_8H_{17}N_3 \cdot HCl$ , MW = 191.7, CAS No. 25952-53-8
- NHS [N-hydroxysuccinimide],  $C_4H_5NO_3$ , MW = 115.09, CAS No. 6066-82-6

## Protocol

### Preparation of Magnetic Fluid-Carboxyl for use

- ◆ The protein/peptide to be labeled must be free of amine-containing additives, such as sodium azide, BSA (bovine serum albumin), Tris (tris(hydroxymethyl)aminomethane), glycine, or glycerol and should be suspended in pH-7.4 PBS (phosphate buffered saline).
1. Place a magnetic column on the magnetic separator. Rinse the column with 1 ml MES Buffer.
  2. Transfer 2 ml Magnetic Fluid-Carboxyl into the column. Press the piston to the column gently.  
\* **NOTE:** Press the piston to the column bottom not more than 1 min.
  3. Take the column out of the magnetic separator.
  4. Add 1 ml MES Buffer into the column. Click the top of column gently and collect the flow-through in a clean battle or tube.

### Conjugation of protein or ligands

5. Prepare 50 mg/ml EDC solution in MES Buffer and 50 mg/ml NHS solution in MES Buffer respectively\*.  
\* **NOTE:** Both EDC solution and NHS solution should be prepared freshly, protected from light, and kept on ice before use.
6. Add 0.4 ml EDC solution and 0.4 ml NHS solution to step 4 tube, and mix it.
7. Add 240 – 6000  $\mu g$  (0.8 – 20  $\mu M$ ) antibody or ligand that you need and mix it.
8. Incubate with tilt rotation or shaker at 4 °C overnight.

### Stop the Reaction

9. Add 1 ml Quench Buffer and mix it.
10. Incubate with tilt rotation or shaker for 30 minutes at room temperature.
11. Place a magnetic column on the magnetic separator. Rinse the column with 1 ml pH 7.4 PBS (or the buffer preferred).
12. Transfer the step 10 tube into the column. Press the piston to the column gently.  
\* **NOTE:** Press the piston to the column bottom not more than 1 min.
13. Add 0.5 ml pH 7.4 PBS (or the buffer preferred) into the column to wash the magnetic beads.  
\* **NOTE:** The magnetic beads don't stay on magnetic separator more than 30 sec at step 12 & 13.
14. Take the column out of the magnetic separator.

15. Add 0.5 ml pH 7.4 PBS (or the buffer preferred) into the column. Click the top of column gently and collect the flow-through in a bottle or tube.
16. Repeat steps 15.

## Storage Conditions & Stability

Storage the product at 2-8°C.

Please refer to the detail expiration date on the product label. The validity period is three months from the date of manufacture. Use the product as soon as possible if the bottle is opened.

## Contact Information

Please contact us when you have any question or comments via e-mail: [info@magqu.com](mailto:info@magqu.com), or phone: +886-2-8667-1897.

## Remarkable Notes

1. Please keep the reagent away from magnets during storage.
2. Do not freeze.
3. For research use only.



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