

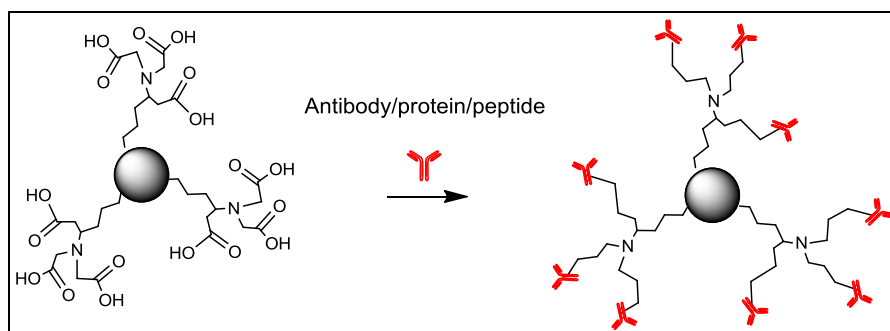
Cat. No. MF-COO-3000

Qbeads-Carboxyl

Product description

Qbeads-Carboxyl is magnetic bead with surface functional group -COOH. The magnetic bead consists of a single-crystal Fe_3O_4 sphere core and dextran coating layer. Through chemical modification of dextran, the carboxyl groups (-COOH) are joined to the magnetic beads through a short hydrophilic linker. The hydrophilic surface ensures the magnetic beads excellent dispersion ability and easy handling property in a wide variety of buffers.

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



Material supplied

Qbeads-Carboxyl provides Fe_3O_4 beads coated with dextran of an average $\sim 1 \mu\text{m}$ in diameter. Carboxyl group, more than 0.2 mM, is coupled covalently to dextran. Qbeads-Carboxyl is supplied in phosphate buffered saline, pH 7.4, 0.02% Tween-20 and 0.09% NaN_3 .

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 Na_2HPO_4 ,
1.47 mM KH_2PO_4 and 2.7 mM KCl
- Quench Buffer :
TBS, pH 8.0 or 5-10 mM
hydroxylamine
- Desired antibody or ligand
- Magnetic stand: **Magdorf** (MSD-08)
for the best performance
- EDC [1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride], $\text{C}_8\text{H}_{17}\text{N}_3 \cdot \text{HCl}$,
MW = 191.7, CAS No. 25952-53-8
- 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
- NHS [N-hydroxysuccinimide], $\text{C}_4\text{H}_5\text{NO}_3$,
MW = 115.09, CAS No. 6066- 82-6
- Tilt rotation device or vortexer
- Eppendorf tubes & pipet

Protocol

Preparation of Qbeads-Carboxyl for use

1. Resuspend the Qbeads-Carboxyl thoroughly by pipetting or vortexing the vial.
2. Transfer adequate amount of Qbeads-Carboxyl into a clean tube.
3. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.
4. Discard the supernatant by aspiration with a pipette.
5. Remove the tube from magnetic stand.
6. Add 200 μ L MES Buffer and resuspend the beads by pipetting.
7. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.
8. Discard the supernatant, and then remove the tube from the magnetic stand.
9. Repeat steps 6-8 twice.

Activation of Qbeads-Carboxyl

10. 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.
11. Add 60 μ L MES Buffer, 20 μ L EDC solution and 20 μ L NHS solution to step 9 tube, and resuspend the beads by pipetting.
12. Incubate with tilt rotation for 15 minutes at room temperature.
13. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.
14. Discard the supernatant, and then remove the tube from the magnetic stand.

Conjugation of protein or ligands

15. Add 50 μ L MES Buffer with 6-150 μ g antibody or ligand and resuspend the beads by pipetting.
16. Incubate with tilt rotation at room temperature for 90 minutes or at 4°C overnight.
17. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.
18. Discard (or collect, if desired) the supernatant as unbound substances, and then remove the tube from the magnetic stand.
19. Add 100 μ L MES Buffer and resuspend the beads by pipetting.
20. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.
21. Discard the supernatant, and then remove the tube from the magnetic stand.

Stop the Reaction

22. Add 500 μ L Quench Buffer and resuspend the beads by pipetting.
23. Incubate with tilt rotation for 30 minutes at room temperature.
24. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.

25. Discard the supernatant, and then remove the tube from the magnetic stand.
26. Add 500 μ L Quench Buffer and resuspend the beads by pipetting.
27. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.
28. Discard the supernatant, and then remove the tube from the magnetic stand.
29. Add 500 μ L PBS, pH 7.4 (or the buffer preferred) and resuspend the beads by pipetting.
30. Place the tube on the magnetic stand for 30-60 seconds to immobilize the beads at tube wall.
31. Discard the supernatant, and then remove the tube from the magnetic stand.
32. Repeat steps 30-32 twice.
33. Add 100 μ L PBS, pH 7.4 (or the buffer preferred) and resuspend the beads by pipetting.
34. Store the beads at 2-8°C.

Storage

Please keep the reagent at 2-8°C. The validity is warranted for 12 months.

Contact Information

Please contact us when you have any question or comments via e-mail: 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. The product is for research use only.



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Product Information

Magnetic Qbeads Series

Products	Cat. No.
Qbeads-Protein A	MF-PRA-3000
Qbeads-Protein G	MF-PRG-3000
Qbeads-NTA-Ni	MF-HIS-3000
Qbeads-Streptavidin	MF-STA-3000
Qbeads-Silica	MF-SIL-5010 MF-SIL-5024
Qbeads-Hydroxyl	MF-DEX-3000
Qbeads-Carboxyl	MF-COO-3000
Qbeads-Amine	MF-NHH-3000
Qbeads-Carboxyl Labeling Kit	KT-COO-3000-5SE

Accessory

Products	Description	Cat. No.
Magdorf	for 1.5 ml eppendorf tube	MDF-08
	for magnetic separating column	MSD-01
Magstand	for 15 ml falcon tube	MSD-15
	for 50 ml falcon tube	MSD-50
Magtractor	for 96-well culture plates	MTR-96
	for 24-well culture plates	MTR-24
	for 6-well culture plates	MTR-06

Magnetic NanoParticle Series

Products	Particle size	Cat. No.
Magnetic Fluid- Hydroxyl	30 nm	MF-DEX-0030
	60 nm	MF-DEX-0060
	90 nm	MF-DEX-0090
Magnetic Fluid- Carboxyl	30 nm	MF-COO-0030
	60 nm	MF-COO-0060
	90 nm	MF-COO-0090
Magnetic Fluid- Amine	30 nm	MF-NHH-0030
	60 nm	MF-NHH-0060
	90 nm	MF-NHH-0090
NanoQ-Carboxyl Labeling Kit	60 nm	KT-COO-0060-1SE

Fluorescent Magnetic Nanoparticles

Products	Particle size	Cat. No.
Blue FluoroNanoQ	60 nm	MF-FBL-0060
Green FluoroNanoQ	60 nm	MF-FGR-0060
Red FluoroNanoQ	60 nm	MF-FRE-0060

Customized Conjugation Service

Products	Particle size	Cat. No.
Customized conjugated magnetic beads	3 μ m	MF-CCS-3000
	30 nm	MF-CCS-0030
Antibody or peptide provided by customers (100 ug)	60 nm	MF-CCS-0060
	90 nm	MF-CCS-0090



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