



nanomag® -D-spio, Ø 20 nm, 50 nm or 100 nm
Covalent binding of proteins/ antibodies by carbodiimide activation
(EDAC-Method)

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| Particle type: | nanomag® -D-spio |
| Product-code: | 79-02-201 / 79-02-501 / 79-02-102 |
| Particle diameter: | 20 nm / 50 nm /100 nm |
| Particle surface: | COOH |

Material:

- 10 ml nanomag® -D-spio suspension (surface: COOH, c = 5 mg/ml)
- 0.5 M 2-(4-morpholino)ethanesulphonic acid buffer which was adjusted to pH 6.3 with 0.5 M Na₂CO₃ (0.5 M MES-buffer)
- 0.1 M 2-(4-morpholino)ethanesulphonic acid buffer which was adjusted to pH 6.3 with 0.5 M Na₂CO₃ (0.1 M MES-buffer)
- 6 mg 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide hydrochloride (EDAC)
- 12 mg N-hydroxysuccinimide (NHS)
- 1 mg protein or antibody
- PBS buffer (pH=7.4)
- 25 mM glycine in PBS buffer

Device:

- high gradient magnetic field (HGMF)

Procedure:

- dissolve 6 mg EDAC and 12 mg NHS in 2 ml 0.5 M MES-buffer (pH = 6.3) and add this solution to 10 ml nanomag® -D -spio suspension (surface: COOH, c = 5 mg/ml),
- incubate the suspension with continuous mixing for 1 hour at room temperature,
- wash the activated particles in the HGMF with 10 ml of 0.1 M MES-buffer,
- resuspend the particles in 5 ml 0.1 M MES-buffer (pH = 6.3) containing 1 mg protein,
- incubate the suspension with continuous mixing for 3 hours at room temperature,
- add 1 ml 25 mM glycine in PBS buffer,
- incubate the suspension with continuous mixing for 30 min at room temperature,
- wash the particles in the HGMF with 10 ml PBS-buffer (pH = 7.4),
- elute the particles in 3 ml PBS-buffer (pH = 7.4).

The protein binding capacity of nanomag® -D-spio particles is about 1 - 2 µg/mg for albumin (BSA), protein A, avidin and streptavidin.