ademtech

Activ-MasterBeads 0275

For research use only

PRODUCT DESCRIPTION

Activ-MasterBeads are non porous monodispersed and superparamagnetic beads composed of magnetic core encapsulated by a highly cross-linked hydrophilic polymer shell and pre-activated by Chloromethyl groups.
Chloromethyl groups *on the Activ*-MasterBeads react with available amino groups directly with no pre-treatment steps or coupling reagent (EDC) providing assay standardization.

Physical characteristics

Diameter: 550-600 nm (PdI<0.170)

Activated surface: Chloromethyl groups

Magnetisation at saturation: approx. 40 emu/g

Iron oxide content: approx. 70%

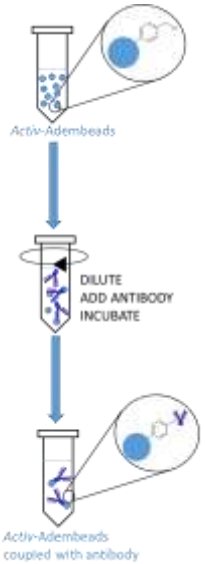
Solid content: 50 mg/ml (5%) in N,N-Diméthylacétamide

PRINCIPLE

Activ-MasterBeads are ready to use magnetic particles. Covalent coupling is performed by incubating the desired ligand with the beads. Ligands commonly coupled to *Activ*-MaterBeads include peptides antibodies, intact proteins and functional enzymes. The coupling reaction can perform at room temperature. The low sedimentation rate due to the nanosize and improved reactions kinetics (short incubation time) compared to other magnetic particles make *Activ*-MasterBeads the best choice for antibody immobilisation for immunoassay.

Version 2.1

INSTRUCTION FOR USE



A) General information

Ligand preparation

- A concentration of 10-40µg of proteins per 20µl of *Activ*-MasterBeads is generally optimal.
- For proteins already in solution, completely remove primary amine containing buffer (e.g., Tris or glycine) using desalting or dialysis

Time, Temperature

- Usually the ligand coupling can be very rapid (10-60min).
- A lower temperature (4°C) can also be used to ensure the stability of ligand and required longer incubation times.

Recommended buffers

Note: Depending on the ligand, protocol can be customised (incubation time / pH, molarity of coupling buffer. Do not use surfactant in coupling buffer.

- Coupling buffer
  - *Activ*-Activation Buffer (20X, # 10105)
- Washing and Storage buffer
  - Storage Buffer (10X, # 10201)

B) Protein immobilisation procedure

Before starting, dilute *Activ*-Activation Buffer (20X) 100 fold in distilled water and Storage Buffer (10X) 10 fold in distilled water.

1. Resuspend the ***Activ*-MasterBeads** by pipetting several times.

Note: This step is important to ensure coupling reproducibility

2. Dilute **20µl** of ***Activ*-Masterbeads** in 100µl of ***Activ*-Activation Buffer (0.2X)**
3. Resuspend ***Activ*-MasterBeads in *Activ*-Activation Buffer (0.2X)** gently by vortexing.

Note: Depending the coupling buffer used, destabilisation of the beads can occur. A short sonication is a good way to ensure optimal homogeneous conditions during the coating step.

4. Add the **ligand** and mix gently by vortexing.
5. Incubate at room temperature (18-25°C) for **60min max** under mixing at 1000rpm.

Note: Depending on the ligand, antibodies are usually grafted after 10min incubation.
Protocol can be customised (incubation time / pH, molarity of coupling buffer).

6. After incubation, block the reaction by adding a quenching solution with primary amine source.

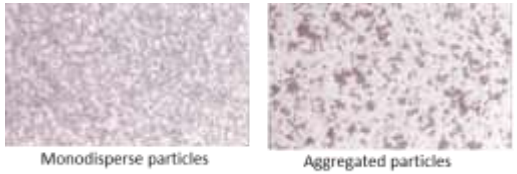
Note:

- BSA (10µl at 10%) can be used alone or can be combined with other blockers.

- Commercial Blockers: Preparations which are a composite of two or more blocking substances can be used for blocking step such Blokmaster™ CE510 provided by JSR Corporation.

7. Incubate at room temperature (18-25°C) for **60min** under mixing at 1000rpm.
8. After incubation, place the tube on the magnet until pellet forming and discard the supernatant. Remove the tube from the magnet and resuspend the beads in **100µl of Storage Buffer (1X)**
9. Repeat steps 8
10. Resuspend the beads **in Storage Buffer (1X)** to achieve your final and desired bead concentration.

Note: Depending of the coupling conditions (Buffers, ligand…) aggregation of the beads can occur. Aggregation can be assessed using 100X magnification (figure below)



This aggregation is completely reversible, use sonication to recover the monodispersity of the particles.

ADDITIONAL MATERIAL REQUIRED

- Magnetic device
- Rotation device
- Test tubes
- Related products:

Buffers solutions
- *Activ-Activation Buffer (# 10105)*
- *Storage Buffer (# 10201)*

Magnetic Devices
- Adem-Mag SV, 1.5 ml (# 20101)
- Adem-Mag MV, 15 ml (# 20102)
- Adem-Mag HV, 50 ml (# 20103)
- Adem-Mag MODULO *Classic* 4x1.5 ml or 2ml (# 20105)

Incubator device
- *MixHeat Thermo Shaker (# 21200)*

STORAGE/ STABILITY

When stored in unopened vials at 2-8°C, *Activ*-MasterBeads are stable until expiration date printed on the label.
The *Activ*-MasterBeads must be maintained in liquid during storage and all handling steps.

Drying will result in reduced performance. Do not freeze the product.

PRECAUTIONS

Precautions should be taken to prevent bacterial contamination of protein-coated Adembeads.
If cytotoxic preservatives are added these must be carefully removed before use by washing.

WARNINGS AND LIMITATIONS

For research use only. Not for use in human diagnostic or therapeutic procedures.

WARRANTY

The products are warranted to the original purchaser only to conform to the quality and contents stated on the vial and outer labels for duration of the stated shelf life.
Ademtech's obligation and the purchaser's exclusive remedy under this warranty is limited either to replacement, at Ademtech's expense, of any products which shall be defective in manufacture, and which shall be returned to Ademtech, transportation prepaid, or at Ademtech's option, refund of the purchase price.
Claims for merchandise damaged in transit must be submitted to the carrier.

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