Datasheet for ABIN1721135

MagSi-STA 1.0 TL beads

2 Images

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Overview

Quantity:	2 mL
Target:	Streptavidin
Application:	Separation (Sep), Immunoassay (IA)

Product Details

Purpose:	Magnetic particles are used as a solid support phase in immunoassays. MagSi-STA are superparamagnetic silica beads with a surface coating of streptavidin for use with biotinylated antibodies.
Specificity:	MagSi-STA beads are useful for many applications, including purification of proteins and peptides or nucleic acids, immunoprecipitation, immunoassays, protein interaction studies, phage display, and cell isolation. MagSi-STA beads are coated with streptavidin, which efficiently binds to biotinylated molecules, e.g. peptides, proteins, antibodies, sugars, lectins. The magnetic properties enable easy and quick washing steps. Because beads are in suspension, incubation times can be shortened compared to alternative techniques. Columns or centrifugation steps are not necessary when working with magnetic beads. This feature enables easy implementation into automated processes. Binding of molecules onto MagSi-STA is based on the strong non-covalent interaction between streptavidin and biotin. Biotin is easily conjugated to various molecules and inexpensive biotinylated products are sold by many companies. MagSi-STA beads are coated with recombinant streptavidin (53 kDa) with shortened N- and C-terminus for improved solubility and accessibility of the sites. Albumin binding sites are eliminated for optimal specificity. MagSi-STA beads are offered in sizes of 600 nm and 1.0 µm. The sedimentation time of 600nm

Product Details

	MagSi beads has been optimized and is approx. 4 times compared to 1.0 µm beads. This allows e.g. long incubation times without shaking/mixing etc. MagSi beads with a diameter of 1 µm have stronger magnetic properties and will separate approx. 2x faster compared to 600 nm in the same conditions. The typical separation time is ≤1 minute using a suitable magnet.
Characteristics:	Binding Capacity: 1200-2000 pmol biotin/mg Bead size: 1 µm Coating chemistry: Tosyl Bead concentration: 6 - 12 x 10^9 beads/mL
Components:	Magnetic silica beads with streptavidin covalently bound to the surface
Material not included:	Buffers and Materials (depending on the application) Magnetic separator for bead separation/collecting Mixer/vortex to homogenize samples and resuspend beads (depending on the application)
Bead Ligand:	Streptavidin
Bead Matrix:	Magnetic Silica particles
Bead Size:	1 µm

Target Details

Target:	Streptavidin
Abstract:	Streptavidin Products

Application Details

Comment:	MagSi-STA beads are added to a sample containing biotinylated molecules. The biotinylated molecules will bind to the beads during a short incubation. The complex is separated from the sample using a magnet and can be used in downstream applications. For applications which require beads which are more hydrophobic.
Protocol:	Magnetic silica particles with high quality streptavidin covalently attached to the bead surface. Applications include immunoassays and capture or purification of biotinylated molecules. Various types of this product are available, with different mean size, streptavidin coating chemistry, and binding capacity.
Reagent Preparation:	For coupling of proteins and peptides a neutral buffer (PBS) is recommended, optionally with a surfactant (0.05% Tween20) or 0.1% BSA to reduce background absorption. For release of antigens from biotinylated antibodies, glycine 0.1 M pH 2.8 (low

Assay Procedure:

A) Bead preparation procedure

1. Resuspend beads by shaking/vortexing
2. Pipette the required volume of beads into a tube or microplate (10-20 µL is suitable as a starting point)
3. Collect beads by placing the tube or microplate on the magnet for 1-2 minutes
4. While tube/micro plate is still on the magnet, carefully remove supernatant without touching the bead pellet
5. Take tube/micro plate from the magnet and add washing buffer
6. Resuspend beads by vortexing or pipetting
7. Repeat step 3 - 5 at least 3 times
8. Finally resuspend the beads in a suitable buffer for your downstream, in a volume equal to the original bead volume.

B) General binding protocol

1. Add biotinylated molecule
2. Incubate for 30 minutes at room temperature
3. Collect beads by placing the tube or microplate on the magnet for 1-2 minutes
4. Wash beads 3-4 times with washing buffer
5. Resuspend the beads in a suitable buffer and volume for your downstream use.

C) Immunoprecipitation

1. Combine the antigen sample with 10 ?g of biotinylated antibody. Dilute each sample to a minimum volume of 300 µL with cell lysis buffer or Binding/Wash Buffer. Incubate 1-2 hours at room temperature or overnight at 4 °C with mixing.
2. Resuspend beads by shaking/vortexing
3. Add 25-50 µL of MagSi-STA beads into a 1.5 mL microcentrifuge tube.
4. Prepare the beads for binding by washing with binding buffer as described in a). Finally resuspend in 500 µL binding buffer.
5. Add the antigen sample/biotinylated antibody mixture to the 1.5 mL microcentrifuge tube containing pre-washed magnetic beads (3.) and incubate at RT for 30 minutes with mixing.
6. Collect beads by placing the tube on the magnet for 1-2 minutes, pipette off and save the supernatant for analysis.
7. Add 300 µL of binding/wash Buffer to the tube and gently mix. Collect the beads and then discard the supernatant. Repeat this step twice.
8. Add 100 µL of elution buffer to the tube. For low pH elution, incubate the tube at room temperature with mixing for 5 minutes. For SDS-PAGE elution, add 100 µL of SDS-PAGE

Application Details

	reducing sample buffer to the tube and heat the samples at 90 °C for 10 minutes. 9. Collect beads by placing the tube on the magnet for 1-2 minutes and transfer the supernatant containing target antigen. *Low pH elution buffers are effective for most antibody-antigen interactions, however, to ensure efficient release of target antigen from the antibody, pre-rinse the beads with 300 µL 0.1% Tween-20 in water before adding low pH elution buffer. ** If SDS-PAGE buffer is selected for elution, the eluate will contain streptavidin monomers and dimers and biotinylated antibody along with target antigen. **D) Immunoassays** For direct capture, add MagSi-STA beads to a sample containing biotinylated antibodies. During a short incubation, the biotinylated molecules will bind to the beads. Collect the beads on a magnet and discard the supernatant. The beads are now ready to bind the antigen (analyte) from your sample. For indirect capture, mix the biotinylated antibodies with your sample containing antigen before addng to the beads. Indirect capture can be advantageous when binding conditions are slow or specific molecule orientation is needed.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	10 mg/mL
Buffer:	PBS, 0.05% Tween20, 0.05% sodium azide
Preservative:	Sodium azide
Precaution of Use:	This product contains sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Handling Advice:	Store in well closed vial and in upright position to prevent drying of the beads, this may result in a decrease of activity. Do not freeze the product! Vortex well before use. Wash the beads to remove preservatives that could interfere with your application. For washing, use the same volume as initially taken from the MagSi-STA vial or more.
Storage:	4 °C

Handling

Expiry Date:	12 months

Images

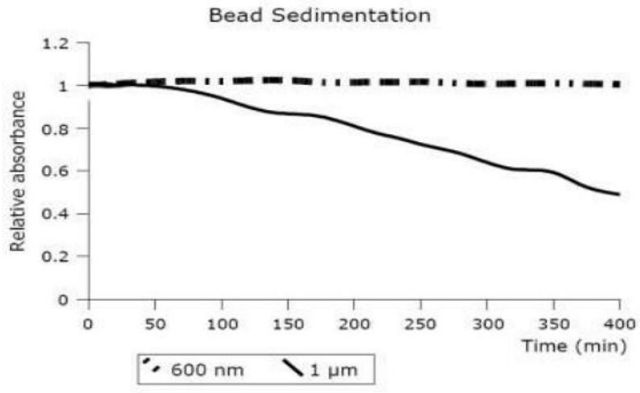

Image 1.

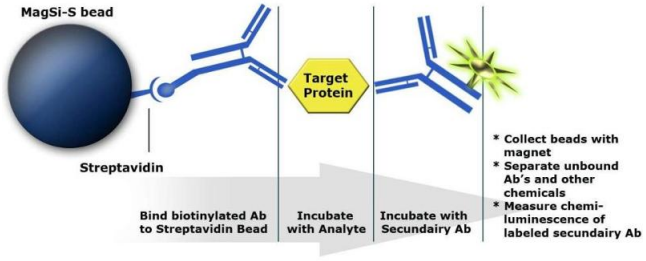

Image 2. Principle of immunoassay based on MagSi-STA beads