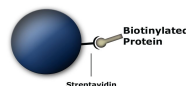


# MagSi-STA 600, 1.0

## Product Description



Product nr: MDXXX01

### Technical Data

Product Name	MagSi-STA	
		600
Size	600 nm	1.0 $\mu$ m
Concentration	10 mg/ml	
	beads/ml	
	8 - 20 $\cdot 10^9$	6 - 12 $\cdot 10^9$
Supplied product volume	2 ml, 10 ml, 100 ml	
Material	Magnetic silica beads with Streptavidin covalently bound to the surface	
Size Distribution	CI 90%	
	350 - 900 nm	0.7 - 1.4 $\mu$ m
Sedimentation		
Biotin Uptake Capacity (pmol/mg)	3000 - 7000	3000 - 7000
Solution additives	PBS (pH 7.4), 0.05% Tween20, 0.05% Sodium Azide (NaN <sub>3</sub> , Toxic!)	
Storage	Store at 4-8°C	

### Material Supplied

- Vial with Streptavidin coated MagSi beads suspended in PBS buffer containing 0.05% Tween20 and 0.05% Sodium Azide.

### Application

#### General Information

MagSi-STA beads are magnetic silica beads coated with Streptavidin. The beads can be used in numerous biological and biochemical applications based on the very strong Streptavidin-Biotin bonding. Silica beads coated with Streptavidin can be used to isolate biotinylated proteins or other biotinylated molecules out of different media. It's easy to bind a biotinylated antibody to the MagSi-STA bead to isolate a specific target protein out of a cell lysate.

The magnetic properties allow easy and quick washing steps in ELISA assays or protein isolations. In addition, since beads are in suspension – and therefore the coupled antibody – the incubation time can be shortened when compared to ELISA tests using antibody coated micro plates.

#### Bead Usage

This product is stable for at least 1 year after production date when stored at 2-8°C. Store beads in well closed vial and in upright position to prevent drying of the beads since this makes them more difficult to resuspend and may decrease their activity. Do not freeze the product! Vortex bead suspension well before use. If you expect iron interference in downstream applications, we strongly advise you to rinse the beads before usage.

The MagSi-STA beads are suspended in PBS buffer + 0.05% Tween and contains 0.05% sodium azide as a preservative. Before using the beads it's important to rinse them with PBS/Tween solution to remove the NaN<sub>3</sub> that could interfere with your test and for safety reasons

since NaN<sub>3</sub> is toxic! MSDS of our products can be found at our site ([www.magnamedics.com](http://www.magnamedics.com))

We recommend to use PBS with  $\pm$  0.05% Tween (or a other surfactant) for washing when using them in a matrix with proteins. The presence of Tween reduces the protein background absorption to an absolute minimum.

- Resuspend beads by shaking/vortexing
- Pipette needed amount in tube or micro plate
- Collect beads by placing the tube or micro plate on the magnet for 1 - 2 minutes
- While tube/micro plate is still on the magnet, carefully remove supernatant without touching the pellet of beads
- Take tube/micro plate from the magnet and add appropriate amount of washing buffer (+/- 50  $\mu$ l for a micro plate and +/- 200  $\mu$ l when using a 1.5 - 2 ml tube).
- Resuspend beads by vortexing or pipetting
- Repeat step 3 - 5 at least 3 times.

### Additional materials needed

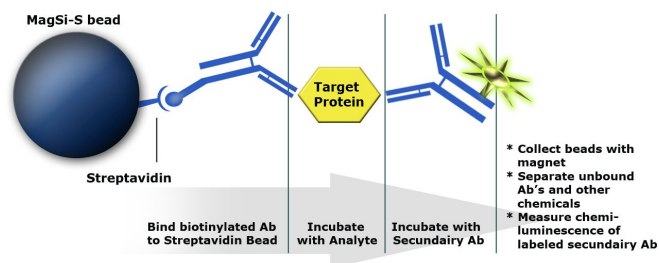
Depending on the application, some buffers and materials are needed.

- Magnets for bead separation/collecting.
- Buffers. As wash and binding buffer we advise a neutral buffer (PBS) with a surfactant (0.05% Tween20) to reduce background absorption.
- Mixer/vortex to mix samples and resuspend beads

## Potocols

### Protein assay/ELISA

Streptavidin coated beads can be used to determine the concentration of an analyte using a biotinylated primary antibody (Ab) and a labelled second antibody (Ab) in a high throughput micro plate system. The secondary antibody can be labelled with different molecules like Peroxidase (POD) or fluoresceine, depending on the readout system used.

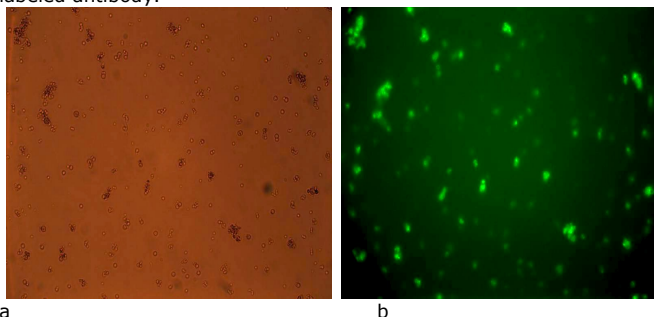


### Method

1. Pipette 5µl beads in a round bottomed 96-well plate
2. Wash beads 3 times in PBS/Tween to remove NaN<sub>3</sub> which is used as a preservative for the bead suspension
3. Add your biotinylated primary Ab (100-1000ng)
4. Add secondary AB (100-1000ng)
5. Add your analyte to the beads, to reduce non-specific absorption to a minimum add Tween or another surfactant to a final concentration of 0.05%
6. Incubate 15-30 minutes at room temperature
7. Collect beads with magnet and remove Ab solution
8. Wash beads at least 3 times (with PBS/Tween)
9. Add substrate (when using POD labelled second AB)
10. Collect beads, pipette supernatant in a new well and measure color development
11. Determine concentration by making a calibration curve.

### Binding of a biotinylated protein

To visualize the binding capacity of the MagSi-STA beads, a biotinylated protein was added to the beads, followed by a fluorescein labeled antibody.



Above pictures show beads under a fluorescent microscope with regular light (a) and fluorescent light (b) magnified 100X. It's clearly visible that the beads are 'coated' with the fluorescent Ab bound to the captured protein. (Some bigger particles are visible, but this is due to clustering under the microscope).

### Release of bound proteins

The Biotin- Streptavidin interaction is very strong, so it needs harsh conditions to break this bound. A few methods are possible when you want to release your biotinylated protein from the bead

- Incubate 5 minutes at 70°C in 10mM EDTA and 90% formamide (pH 8,0)

or

- incubate 10 minutes at 90°C in 0.1% SDS. This will denature the protein and makes it applicable for SDS-PAGE .

## Additional Information

### Internet

- [www.magnamedics.com](http://www.magnamedics.com)

### Disclaimer

For R&D use only. Not for drug, household or other uses. Product contains 0.05% Sodium Azide which is toxic. Avoid contact with the suspension buffer. When disposing the suspension buffer, flush with large amounts of water. Material Safety Data Sheet (MSDS) is available on our website at [www.magnamedics.com](http://www.magnamedics.com).

## Order Information

Product	Volume	Product number
MagSi-STA 600	2 ml	MD16001
MagSi-STA 600	10 ml	MD18001
MagSi-STA 600	100 ml	MD19001
MagSi-STA 1.0	2 ml	MD01001
MagSi-STA 1.0	10 ml	MD03001
MagSi-STA 1.0	100 ml	MD04001

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