

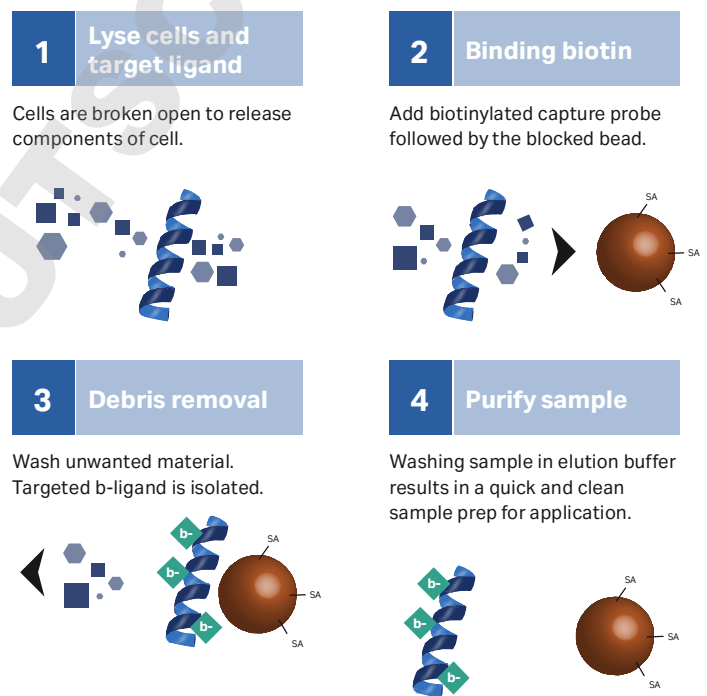
# Sera-Mag SpeedBeads Streptavidin-Blocked Magnetic Particles

## SAMPLE ENRICHMENT

Sera-Mag™ SpeedBeads Streptavidin-Blocked Magnetic Particles use a non-surfactant, non-protein blocking reagent. This product features a blocked magnetic streptavidin bead with low nonspecific binding (NSB) and high binding capacity for biotinylated target molecules. The particles are well suited for automated immunoassays, immunoprecipitation, and protein purification.

- Low nonspecific binding aids in capturing a clean sample
- Eliminates need for protein-based blockers, which can interfere with downstream applications
- High binding capacity delivers greater target isolation of proteins with fewer beads
- Very slow settling rate in the absence of a magnetic field allows for more even interaction throughout the sample

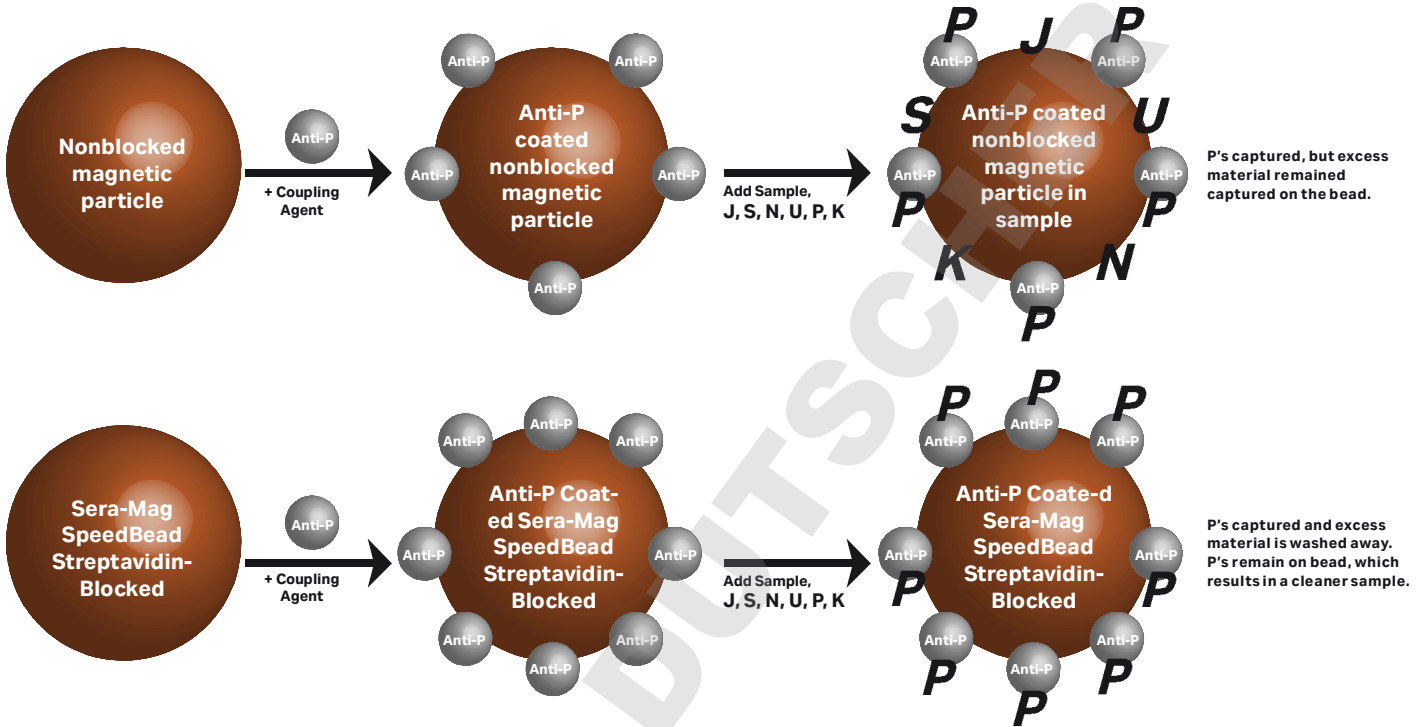
Sera-Mag SpeedBeads Streptavidin-Blocked Magnetic Particles provide solid phase support in immunoassays and molecular biology applications. Proteins, nucleic acids, peptides and other compounds that may be difficult to attach to particle surfaces by conventional means may be amenable to biotinylation. Once biotinylated, these molecules can be purified quickly and easily using streptavidin coated SpeedBeads (Fig 1).



**Fig 1.** Quick and easy steps for sample preparation using Sera-Mag Magnetic SpeedBeads Streptavidin-Blocked.

Sera-Mag SpeedBeads Streptavidin-Blocked Magnetic Particles are uniform, colloiddally stable, monodispersed, non-porous, superparamagnetic beads made by a proprietary core-shell method. The core is a carboxylate-modified particle made by free radical emulsion polymerization of styrene and acid monomer. Two layers of magnetite ( $Fe_3O_4$ ) are coated onto this core particle, resulting in faster magnetic response times. The particles are then encapsulated with proprietary polymers. Finally, the surface is blocked with a proprietary, non-protein based method, to help prevent nonspecific binding of proteins (Fig 2).

Sera-Mag SpeedBeads Blocked Streptavidin particles are stable, nominal 1  $\mu m$  particles with highly active streptavidin covalently bound to the surface. The particles are supplied at approximately 1% solids (10 mg/ml) in 0.05% sodium azide water solution.



**Fig 2.** The difference between a nonblocked magnetic particle and a Sera-Mag SpeedBead Streptavidin-Blocked particle. The nonblocked particle has high nonspecific binding (NSB), which causes poor sensitivity, signal loss and false positive results. The Sera-Mag SpeedBead Streptavidin-Blocked bead is able to significantly reduce undesired adsorption of proteins from a sample matrix.

# Specifications

Particle composition	Polystyrene core particle encapsulated in a double layer of magnetite, covalently coated with streptavidin
Physical properties	Excellent chemical stability in several different solutions. Compatible with additives such as preservatives, buffers and stabilizers. They can be diluted in alcohol-water mixtures, acids (to about pH 1), bases (to pH 12).
Nominal diameter	1 $\mu\text{m}$
Concentration	The particles are supplied at approximately 1% solids (10 mg/ml)
Particle density	$\sim 2 \text{ g/cm}^3$ density
Fill volume	1 ml, 5 ml and 100 ml bottles
Magnetite content	$\sim 60\%$
Additives	0.05% sodium azide
Biotin binding capacity	Biotin binding capacity is proportional to the amount of covalently bound streptavidin (SA) on the surface of the particles. The activity of bound SA is measured by the binding of biotinylated fluorescein (BF). Quantitative amounts of BF in the supernatant are measured with a fluorometer after incubating with and without Sera-Mag SpeedBeads Blocked Streptavidin particles present. These BF measurements are used to calculate the biotin-binding capacity. Biotin-binding capacity is reported in picomoles of biotin per milligram of particle (pmol/mg).
Package includes	Certificate of Analysis and Package Insert
Storage & handling	Unless otherwise stated, refrigerate ( $2^\circ\text{C}$ to $8^\circ\text{C}$ ) product when not in use but do not freeze. Store upright and keep bottle tightly sealed. Mix product with inversion by hand, roller or vortex mixer.

## Ordering Information

Product	Quantity	Code number
Sera-Mag SpeedBeads Streptavidin-Blocked Magnetic Particles	1 ml	2115-2104-011150
Sera-Mag SpeedBeads Streptavidin-Blocked Magnetic Particles	5 ml	2115-2104-010150
Sera-Mag SpeedBeads Streptavidin-Blocked Magnetic Particles	100 ml	2115-2104-010350

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