

ENZYMES

Smartbond Streptavidin Magnetic Beads

CAT# SMB-70-4903-01, SMB-70-4903-05,
 SMB-70-4903

► SPECIFICATIONS

| | |
|--------------------------|------------------------------------|
| Form | Beads in suspension |
| Concentration | 4 mg/mL |
| Particle Size | 1µm by laser diffraction |
| Binding Capacity | > 200 µg biotinylated IgG/mg beads |
| Size Distribution | CV 5-10% |
| Ferrites | 40% (± 5%) |

► PRODUCT FORMAT

- Available as 5 mL or bulk (gms)
- Sample evaluation kit available as 1 mL
- Formulation: Streptavidin coated magnetic beads suspended in 0.02% NaN₃, 0.1% BSA, 0.05% Tween® 20, 1 X PBS, (pH 7.4 @ 2-8°C)
- Storage: 2-8°C

► DESCRIPTION AND FEATURES

Smartbond streptavidin coated magnetic beads are made of nanometric-sized iron oxide particles encapsulated or glued together with polymers. These superparamagnetic particles are surface-modified, optimized and validated for use with high-throughput random access magnetic platform analysers in the application of immune-diagnostics.

They can also be used for preparing single stranded DNA templates, immobilization of large DNA fragments, purifying sequencing products, immunoprecipitation, cell isolation, nucleic acid isolation, purification of DNA/RNA binding proteins and protein purification and are more suited for automated processes.

Sekisui Diagnostics offers one of the most efficient Streptavidin coated magnetic bead particles. Smartbond Streptavidin is covalently coupled to the paramagnetic bead via proprietary linkers. The proprietary conjugation chemistry employed produces beads that possess highest biotin binding capacity in the market.

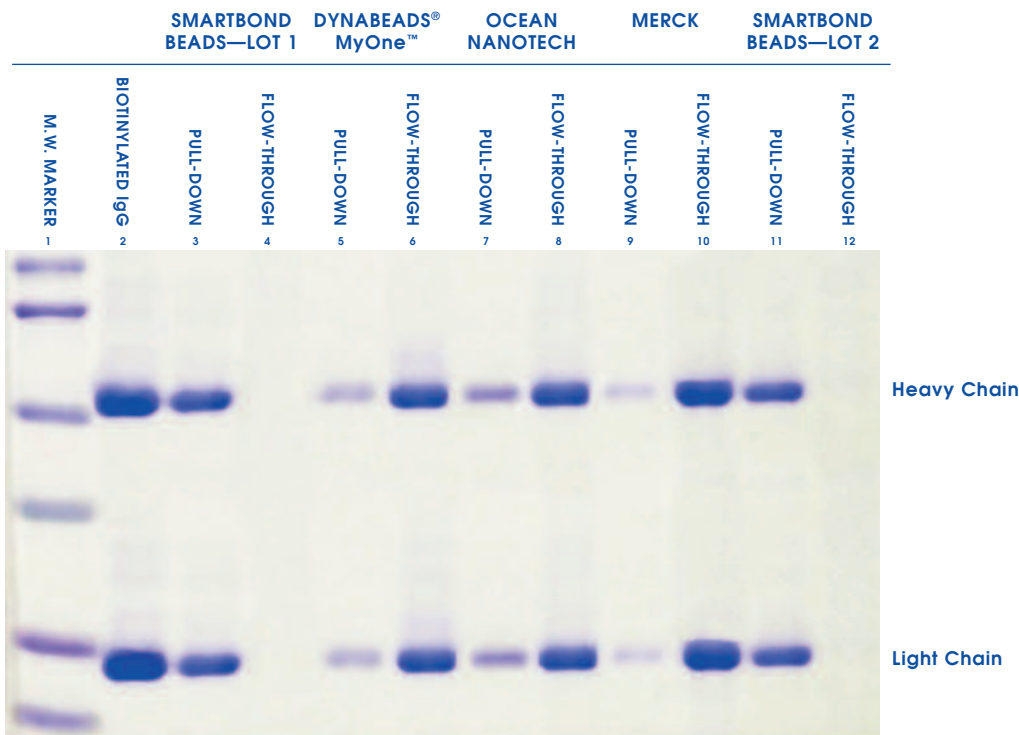
► CHARACTERISTICS

- Highest biotin binding; outperforms competitors on free-biotin binding capacity
- Requires less volume than the competition (2.5 times lower) concentration to perform similar assays which is a cost effective solution for developing automated assays
- Negligible non-specific binding
- Compatible with broad pH and temperature ranges
- Uniform size and lot-to-lot reproducibility

APPLICATION DATA

PULL DOWN ASSAY

10µL (0.1mg) of Streptavidin coated beads from Life Technologies (Dynabeads® MyOne™ Streptavidin T1), Sekisui Diagnostics (Smartbond Streptavidin Magnetic beads), Ocean Nanotech, and Merck were incubated at room temperature with 20µg of biotin-IgG for 1 hour. All Streptavidin coated magnetic beads used were 1µm in size. The beads and supernatant were separated by magnets, and pull-down efficiency was evaluated by SDS-PAGE. All the paramagnetic beads were washed 5 times, with PBS buffer, before the start of the binding reaction incubation.



Figure, Gel Electrophoresis: Protein pull-down of Biotinylated-IgG spiked in PBS with Streptavidin coated superparamagnetic beads: (1) MW Marker (2) 20.0µg Biotin IgG (3) & (4) Smartbond Beads (Lot#1) protein pull-down & flow-through of protein pull-down (5) & (6) Dynabeads® MyOne™ Streptavidin T1 protein pull-down & flow-through of protein pull-down (7) & (8) Ocean NanoTech SAV-Beads (newer) protein pull-down flow-through of protein pull-down (9) & (10) Merck SAV-Beads protein pull-down & flow-through of protein pull-down (11) & (12) Smartbond Beads (Lot#2) protein pull-down & flow-through of protein pull-down.

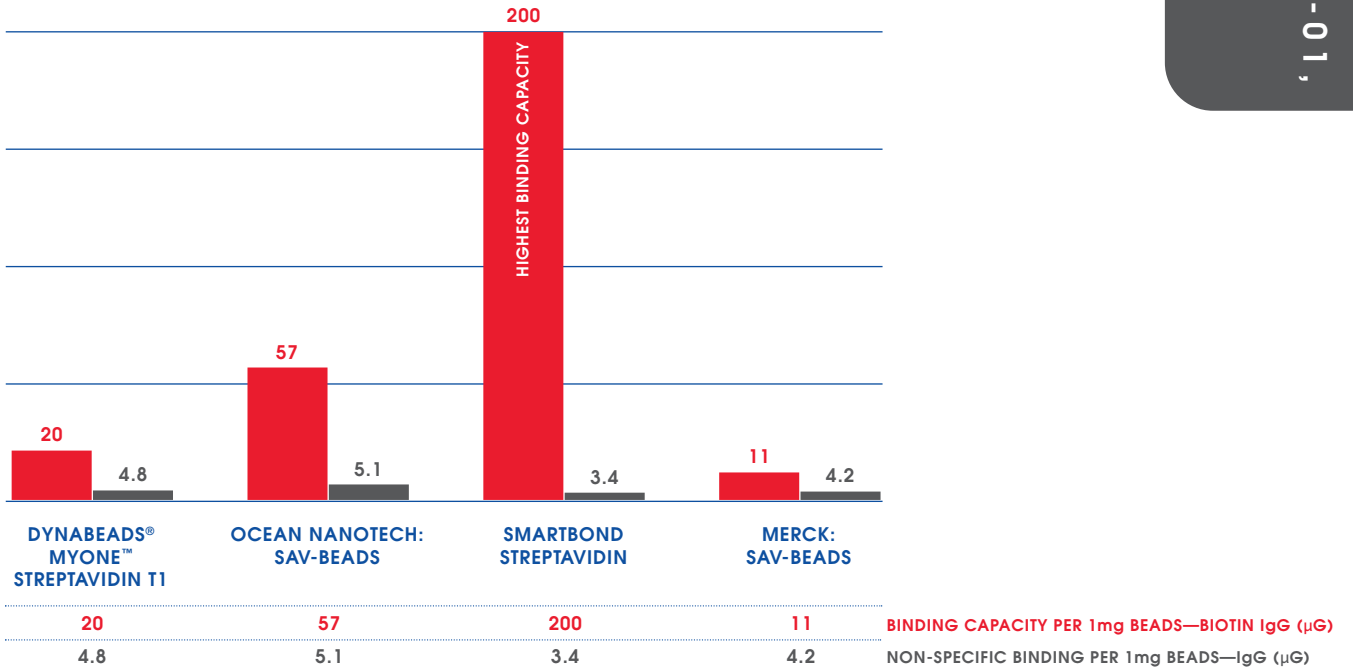
All the spiked Biotin-IgG (20µg) was captured by the Smartbond Streptavidin Magnetic beads. However, the majority of the biotin ligand remained in the supernatant and could not be captured using competitor SAV Magnetic beads.

APPLICATION DATA continued

BINDING CAPACITY AND NON-SPECIFIC BINDING (NSB) TESTS

All four-streptavidin coated magnetic beads brands (1µm) were incubated for 1 hour with biotin-IgG or IgG (control) at a ratio of 10µl beads to 20µg Biotin-IgG or 20µg IgG. The binding capacity and non-specific binding were determined.

BIOTIN BINDING CAPACITY AND NON-SPECIFIC BINDING



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