

Datasheet for S000-01**Streptavidin****Overview**

Description:	Streptavidin - S000-01
Item No.:	S000-01
Size:	5 mg
Applications:	SDS-PAGE, ELISA, FC, IF, LFA, Microarray, Other

Product Details

Background:	Streptavidin is a bacterial protein (from <i>Streptomyces avidinii</i>) that has an exceptionally high binding affinity for biotin (B7). Streptavidin-biotin binding is one of the strongest known non-covalent interactions and is highly resistant to many conditions that would typically cause dissociation (such as organic solvents, denaturants, detergents, and extreme temperatures or pH). Streptavidin's affinity for biotin can be employed in a variety of experimental uses, from purifications to standards, to means of detection or pull down experiments.
Synonyms:	SA, S avidin, streptococcus avidin
Specific Activity:	15.5 U/mg by biotin titration method

Target Details

Purity/Specificity:	Streptavidin is chromatographically pure and shows predominantly a single 53,600 dalton band by SDS-PAGE.
Relevant Links:	• NCBI - CAA00084.1 • UniProtKB - P22629

Application Details

Tested Applications:	SDS-PAGE
Suggested Applications:	ELISA, FC, IF, LFA, Microarray, Other (Based on references)

Application Note: Streptavidin has been tested by SDS-PAGE and is suitable for use as antigen, as a control or standard in assays, and most other immunological methods as well as enzyme conjugates and complexes; Southern blots and other methodologies related to DNA and RNA analysis; Western blots; and purification of proteins or other antigens with biotinylated antibodies or lectins by use of immobilized streptavidin.

Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ChIP:	User Optimized
ELISA:	1:20,000 - 1:200,000
EMSA:	User Optimized
WB:	1:2000-1:20,000

Formulation

Physical State:	Lyophilized
Concentration:	0.9 mgP/mg streptavidin/lyophilizate (balance is sodium chloride).
Buffer:	0.15 M Sodium Chloride
Preservative:	None
Stabilizer:	None
Reconstitution Volume:	5.0 mL
Reconstitution Buffer:	Restore with deionized water (or equivalent)

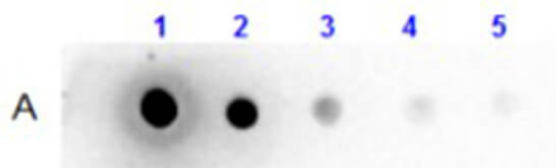
Shipping & Handling

Shipping Condition:	Ambient
Storage Condition:	Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. Streptavidin is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images

Dot Blot

Dot Blot Results of Llama IgG2 Isotype control Biotin Conjugated. Llama IgG2 Isotype control Biotin Conjugate (1) 100ng, (2) 33.33ng, (3) 11.11ng, (4) 3.70ng, (5) 1.23. Antibody: Streptavidin (p/n S000-01) at 1:40,000 for 30 mins at RT. Block: BlockOut (p/n MB-073) for 30 mins at RT. Exposure: 1 sec.



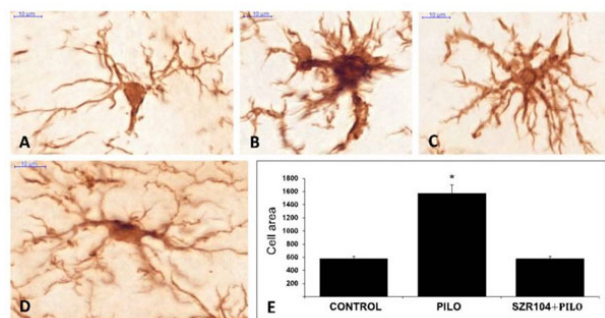
Bottle

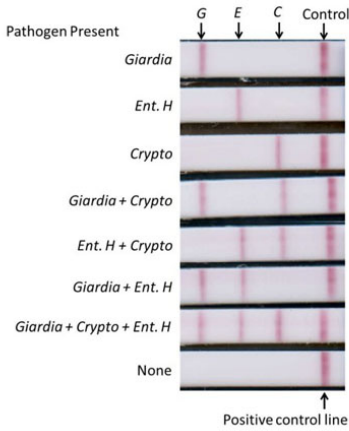
Streptavidin



Immunohistochemistry

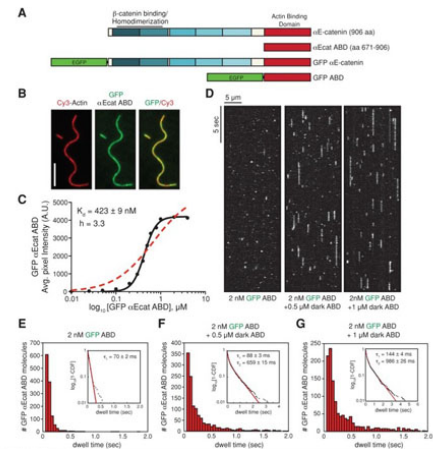
(A–D): ionized calcium-binding adaptor molecule 1 (Iba1)-stained microglia cells from control (A), pilocarpine(PILO)-treated (B,C) and SZR104 + PILO-treated (D) animals. Scale bars: 10 μ m. (E): The average microglia cell areas (cell body and processes) in μ m² values on the y-axis. Biotinylated secondary antibodies (1:400) and the signal was detected with peroxidase-labeled streptavidin (1:6000) (p/n S000-01). (n = 10; mean $\pm$ SEM) in control, PILO-treated and SZR104 + PILO-treated animals (* p $\leq$ 0.05). Fig 3. PMID: 33297593.





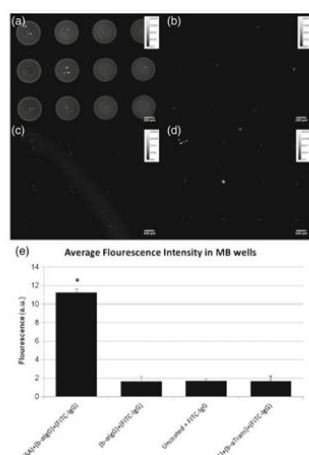
Lateral Flow

Multiplex lateral flow detection strips with three detection zones and a positive control zone. Strips tested positive (shown from top to bottom) for *Giardia*, *Entamoeba histolytica*, *Cryptosporidium*, *Giardia* + *Cryptosporidium*, *Entamoeba histolytica* + *Cryptosporidium*, *Giardia* + *Entamoeba histolytica*, and *Giardia* + *Cryptosporidium* + *Entamoeba histolytica*, and no pathogens. Streptavidin-coated gold colloid for lateral flow strips (Streptavidin p/n S000-01). Fig 3. PMID: 26669715.



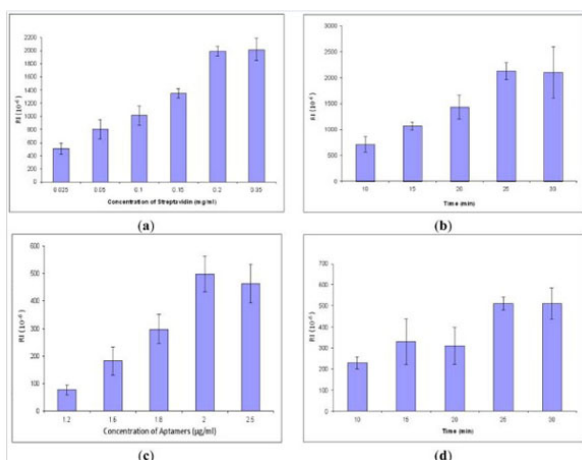
Figure

α E-catenin ABD binds cooperatively to actin filaments. (A) α E-catenin is composed of an array of five four-helix bundles (blue-shaded boxes) and a C-terminal five-helix bundle (red box). The β -catenin/homodimerization region and actin-binding domain are marked. All α E-catenin constructs used in this study are defined. (B) Localization of 1 μ M GFP α E-catenin ABD bound to phalloidin-stabilized filamentous actin (20% Cy3 labeled). Scale bar, 5 μ m. (C) Average fluorescence signal of GFP α E-catenin ABD bound to single-actin filaments plotted against total concentration of GFP α E-catenin ABD. Each data point represents average GFP fluorescence per pixel measured over ≥ 100 μ m of single actin filaments (≥ 2 TIRF flow chambers). Data were fitted to either a Hill equation (black, straight line) or a hyperbolic function (red, dashed line). (D) Kymographs showing 2 nM GFP α E-catenin ABD binding and dissociating from the sides of single actin filaments in the absence or presence of 0.5 or 1 μ M dark α E-catenin ABD. (E–G) Histograms of 2 nM GFP α E-catenin ABD dwell times on filamentous actin in the absence (E) or presence (F) of 0.5 μ M dark α E-catenin ABD or (G) 1 μ M dark α E-catenin ABD. Inset, curve fit of the 1-cumulative distribution frequency: (E) single-exponential fit ($\tau_1 = 70 \pm 2$ ms, $n = 1244$ molecules), (F) double-exponential fit ($\tau_1 = 88 \pm 3$ ms [58%], $\tau_2 = 659 \pm 15$ ms [42%], $n = 1289$ molecules), and (G) double-exponential fit ($\tau_1 = 144 \pm 4$ ms [64%], $\tau_2 = 986 \pm 26$ ms [36%], $n = 1210$ molecules). Streptavidin p/n S000-01). Fig 1. PMID: 24068324.



Figure

Development of PDMS MB well surface coating to enhance capture cells with affinity for α -IgG antibody. FITC-conjugated IgG was added to MB wells coated with a streptavidin + biotinylated α -IgG, b biotinylated α -IgG only, c uncoated MBs and d streptavidin + biotinylated α -Transferrin. Quantification of the fluorescent intensity averaged over 12 wells is illustrated in (e). Results indicate that FITC-IgG predominantly binds to the (SA) + b- α (IgG) coating. Bars indicate standard error, $n=12$, $*p<0.0001$. Streptavidin (p/n S000-01) Fig. 4. PMID: 23358874.



Figure

Optimization of streptavidin and aptamers, each concentration and incubation time repeated three times, respectively: (a) Streptavidin concentration; (b) Streptavidin incubation time; (c) Aptamer concentration; (d) Aptamer incubation time. Streptavidin (p/n S000-01). Figure 4. PMID: 23112728.



SDS-PAGE

SDS-Page of Streptavidin. Lane 1: Molecular weight markers. Lane 2: Streptavidin. Load: 1.0 ug per lane. Predicted/Observed size: The molecular weight of streptavidin is 55,000 daltons. The protein is composed of 4 essentially identical polypeptide chains (homotetramer). This product is chromatographically pure Streptavidin and shows predominantly a single 13.800 dalton band by SDS-PAGE.

References

- Moss G et al. Impact of protein corona on magnetic particle spectroscopy-based bioassays. *Nanoscale Adv.* (2026)
- Tiffere AH et al. Nanogold-Lateral Flow Assay for Ginseng DNA Differentiation. *Biosensors (Basel)*. (2025)
- McArthur N et al. Development of a pan-tau multivalent nanobody that binds tau aggregation motifs and recognizes pathological tau aggregates. *Biotechnol Prog.* (2024)
- Moss G et al. Effects of Salt Concentration on a Magnetic Nanoparticle-Based Aggregation Assay with a Tunable Dynamic Range. *Sensors (Basel)*. (2024)
- McArthur N et al. Generation of nanobodies with conformational specificity for tau oligomers that recognize tau aggregates from human Alzheimer's disease samples. *Biomatter Sci.* (2024)
- Li X et al. Polarized focal adhesion kinase activity within a focal adhesion during cell migration. *NAT Chem Biol.* (2023)
- Duan Y et al. Detection of cellular traction forces via the force-triggered Cas12a-mediated catalytic cleavage of a fluorogenic reporter strand. *Nat Biomed Eng.* (2023)
- Britain DM et al. Progressive enhancement of kinetic proofreading in T cell antigen discrimination from receptor activation to DAG generation. *Elife.* (2022)
- Blanchard, A et al. Turn-key mapping of cell receptor force orientation and magnitude using a commercial structured illumination microscope. *Nature Communications* (2021)
- Blanchard A et al. Turn-key mapping of cell receptor force orientation and magnitude using a commercial structured illumination microscope. *Nat Commun.* (2021)
- Lajkó, N et al. Sensitivity of Rodent Microglia to Kynurenines in Models of Epilepsy and Inflammation In Vivo and In Vitro: Microglia Activation is Inhibited by Kynurenic Acid and the Synthetic Analogue SZR104. *International Journal of Molecular Sciences* (2020)
- Brockman, JM et al. Live-cell super-resolved PAINT imaging of piconewton cellular traction forces. *Nature Methods* (2020)
- Tischer, DK et al. Light-based tuning of ligand half-life supports kinetic proofreading model of T cell signaling. *Elife* (2019)
- Brockman, JM et al. Mapping the 3D orientation of piconewton integrin traction forces. *Nature Methods* (2018)
- Zachary Crannell et al. Multiplexed Recombinase Polymerase Amplification Assay To Detect Intestinal Protozoa. *Anal Chem.* (2016)
- Lum, J et al. An Impedance Aptasensor with Microfluidic Chips for Specific Detection of H5N1 Avian Influenza Virus. *Sensors (Basel, Switzerland)* (2015)
- Janssen, K M J et al. Rheumatoid arthritis-associated autoantibodies in non-rheumatoid arthritis patients with mucosal inflammation: a case-control study. *Arthritis Research & Therapy* (2015)
- Ofori, LO et al. High-affinity recognition of HIV-1 frameshift-stimulating RNA alters frameshifting in vitro and interferes with HIV-1 infectivity. *Journal of Medicinal Chemistry* (2014)
- Hansen, SD et al. α E-catenin actin-binding domain alters actin filament conformation and regulates binding of nucleation and disassembly factors. *Molecular Biology of the Cell* (2013)
- Hansen, SD et al. Cytoplasmic actin: purification and single molecule assembly assays. *Methods in Molecular Biology (Clifton, N.J.)* (2013)

- Jones MC et al. Characterization of cell seeding and specific capture of B cells in microbubble well arrays. *Biomed Microdevices*. (2013)
- Bai, H et al. A SPR aptasensor for detection of avian influenza virus H5N1. *Sensors (Basel, Switzerland)* (2012)
- Lee, S et al. Optimized combination therapy using bortezomib, TRAIL and TLR agonists in established breast tumors. *Cancer Immunology, Immunotherapy : Cii* (2010)
- Haugland, GT. et al. Stimulation of MCM helicase activity by a Cdc6 protein in the archaeon *Thermoplasma acidophilum*. *Nucleic Acids Research* (2006)

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