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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 Streptomyces avidinii) 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

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

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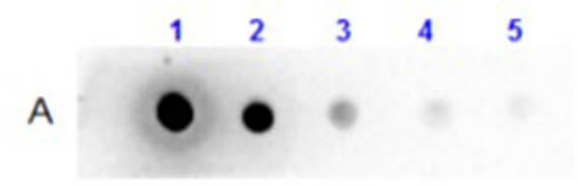
|---|---|
| **Physical State:** | Lyophilized |
| **Concentration:** | 0.9 mg protein/mg streptavidin/lyophilizate (balance is sodium chloride). |
| **Buffer:** | 0.15 M Sodium Chloride |
| **Preservative:** | None |
| **Stabilizer:** | None |
| **Reconstitution Volume:** | 5.0 mL |
| **Reconstitution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

## Shipping & Handling

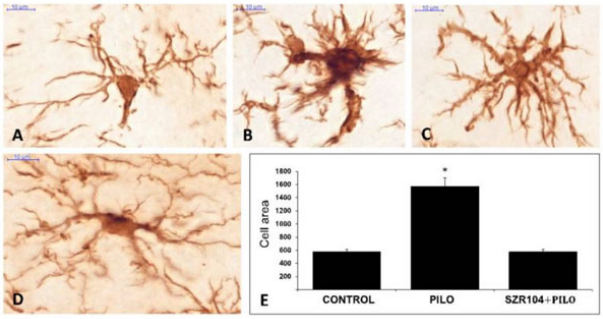
| | |
|---|---|
| **Shipping Condition:** | Ambient |
| **Storage Condition:** | Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. 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

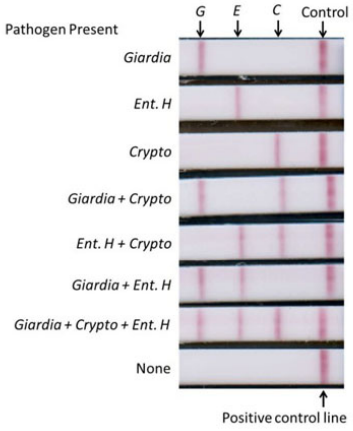



**Dot Blot**
Dot Blot Results of Llama IgG2 Isotype control Biotin Conjugated. Llama IgG2 Isotype control Biotin Conjugate (1) 100ng, (2) 33.33ng, (3) 11.11ng, (4) 3.70ng, (5) 1.23. Antibody: Streptavidin (p/n S000-01) at 1:40,000 for 30 mins at RT. Block: BlockOut (p/n MB-073) for 30 mins at RT. Exposure: 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 µm. (E): The average microglia cell areas (cell body and processes) in µm2 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 ± 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.

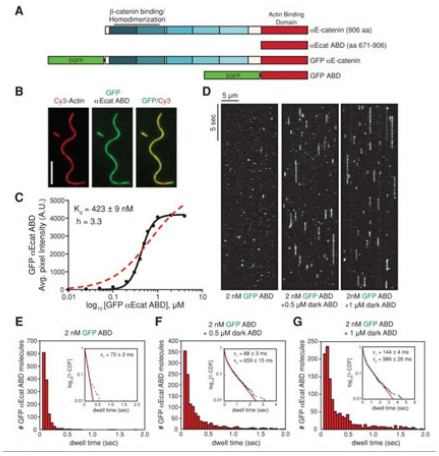



**Figure**
αE-catenin ABD binds cooperatively to actin filaments. (A) αE-catenin is composed of an array of five four-helix bundles (blue-shaded boxes) and a C-terminal five-helix bundle (red box). The β-catenin/homodimerization region and actin-binding domain are marked. All αE-catenin constructs used in this study are defined. (B) Localization of 1 µM GFP αE-catenin ABD bound to phalloidin-stabilized filamentous actin (20% Cy3 labeled). Scale bar, 5 µm. (C) Average fluorescence signal of GFP αE-catenin ABD bound to single-actin filaments plotted against total concentration of GFP αE-catenin ABD. Each data point represents average GFP fluorescence per pixel measured over ≥100 µm 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 αE-catenin ABD binding and dissociating from the sides of single actin filaments in the absence or presence of 0.5 or 1 µM dark αE-catenin ABD. (E–G) Histograms of 2 nM GFP αE-catenin ABD dwell times on filamentous actin in the absence (E) or presence (F) of 0.5 µM dark αE-catenin ABD or (G) 1 µM dark αE-catenin ABD. Inset, curve fit of the 1-cumulative distribution frequency: (E) single-exponential fit (τ1 = 70 ± 2 ms, n = 1244 molecules), (F) double-exponential fit (τ1 = 88 ± 3 ms [58%)], τ2 = 659 ± 15 ms [42%], n = 1289 molecules), and (G) double-exponential fit (τ1 = 144 ± 4 ms [64%], τ2 = 986 ± 26 ms [36%], n = 1210 molecules). Streptavidin p/n S000-01). Fig 1. PMID: 24068324.

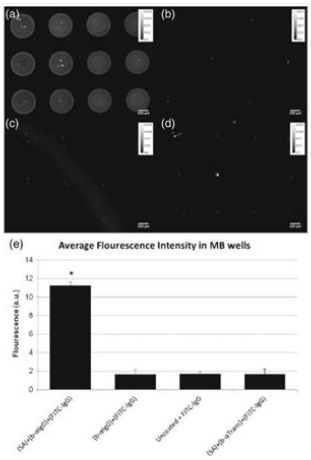



**Figure**
Development of PDMS MB well surface coating to enhance capture cells with affinity for α-IgG antibody. FITC-conjugated IgG was added to MB wells coated with a streptavidin + biotinylated α-IgG, b biotinylated α-IgG only, c uncoated MBs and d streptavidin + biotinylated α-Transferrin. Quantification 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.

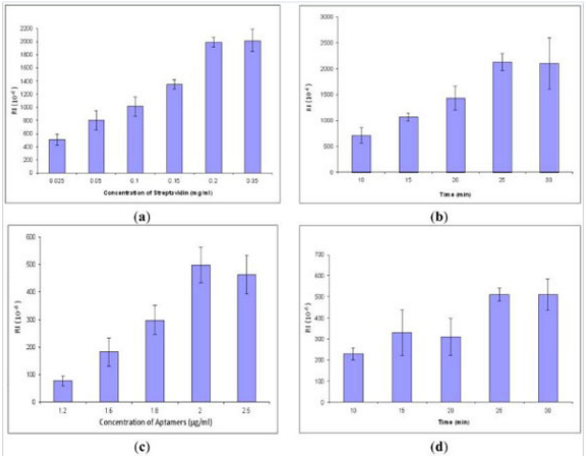



**Figure**
Optimization of streptavidin and aptamers, each concentration and incubation time repeated three times, respectively: (a) Streptavidin concentration; (b) Streptavidin incubation time; (c) Aptamer concentration; (d) Aptamer incubation time. Streptavidin (p/n S000-01). Figure 4.PMID: 23112728.


**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.

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