Note that this data sheet is not lot-specific. Please consult the vial label and the certificate of analysis for information on specific lots.

Polystreptavidin R

Catalogue Number: 10 120 030 / 10 120 050/ 10 120 100 Package Size: 3 mg / 5 mg/ 10 mg

1. Introduction

Polystreptavidin R is a chemically modified polymerized Streptavidin characterized by an extraordinary high Biotin binding capacity. Polystreptavidin R coatings on solid phases offer a universal immobilization principle for the detection and analysis of proteins, peptides, PCR-fragments, haptens etc., which must be present in a biotinylated form. Coatings made of Polystreptavidin R combine the excellent binding capacity with a high chemo and thermo stability and a long shelf life. It is suitable for coatings of membranes, beads, biochips, plastics etc.

2. Description:

Polystreptavidin R is a coating solution concentrate.

Molecular Mass	**> 2,000-20,000 kDa** Measured by Field-Flow-Fractionation technology*
Biotin Binding Capacity, 50% Intercept	**> 350 pmol/ml** The Biotin binding capacity is measured by a competitive Biotin binding assay using Biotin-HRP-conjugate on a high binding polystyrene microplate coated with 20 µg/ml Polystrept R. The Biotin-HRP will be competitively replaced by Biotin. Unbound Biotin-HRP of a dilution row is measured by colorimetric spectrometry in O.D. using HRP-reaction with TMB (evaluation of 50% Intercept).
Concentration	**> 2.5mg/ml** The protein concentration is measured by spectral-photometry ($OD_{280\ nm}$-$OD_{402\ nm}$). The extinction coefficient defines as follows: A280nm [ml/mg, 1cm,] =2.741.
Form	**Turbid Solution in 0.05 M PBS with 0.05% NaN_3, pH 7.4** Due to the loss of substance, a filtration of the solution is not recommended. Increasing turbidity caused by aggregation over time can falsify the photometric measurement
Storage/Transportation	**2 to 8 °C, Do not freeze!** During transportation a short term storage at temperatures < 50°C do not influence the product quality negative.
Handling	Polystrept R is a coating solution concentrate, dilutable with PBS. Avoid solutions above pH 8.

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Usage Statement	Laboratory reagent for research use only.
Quality Parameter	The quality control of each batch Polystreptavidin R composes of the following tests: 1. biotin binding capacity 2. concentration The molecular mass is confirmed by size exclusion chromatography during the manufacturing procedure.

**: Field-flow fractionation (FFF) is an analytical technique developed specifically for separating and characterizing macromolecules, supramolecular assemblies, colloids and particles. It combines the effects of a laminar flow profile with an exponential concentration profile of analyte components caused by their interactions with a physical field applied perpendicular to the flow of a carrier liquid.*

3. Applications

Polystreptavidin R is a reagent for surface coating of plastics, membranes, beads etc. with *Maximum Biotin Binding Capacity*. It improves the signal-noise-relation and saves material costs.

General instructions for adsorptive coating:

Polystreptavidin R has to be used in diluted form. For this, use a neutral buffer solution (e.g. phosphate buffered saline, PBS). Avoid solutions above pH 8.

The best coating concentration for an application has to be identified by tests.

The concentration range is commonly used:

10 – 50 µg/ml for coating of microplates

10 – 200 µg/ml for coating of biochips, beads etc.

It is recommended that the coating process is carried out overnight (about 18 hours) at room temperature. This should take place under mild agitation, especially when small particles such as beads are to be coated. It can be done for example on a wobble roller mixer.

After the coating, the Polystreptavidin R solution should be aspirated and the material thoroughly washed with distilled water or sodium chloride solution (physiological saline solution, 0.9% NaCl).

The coated material can be dried after the washing step at room temperature overnight or at 30°C for about 4 hours. Depending on the material, it can be put on filter paper and carefully turned from time to time. The coated and dried material can be stored in foil bags with desiccant at +2 to +8°C.

Usually Polystreptavidin R coated surfaces itself are well blocked. Any additional block and / or stabilization steps have to be tested out. Blocking can also be achieved by addition of blocking substances into the assay buffer during the following application.

BioTeZ offers various compounds for blocking and stabilizing.

Special coating instructions for lateral flow membranes:

Polystreptavidin R is first diluted with a neutral buffer solution. The recommended coating concentration is 300 – 3000 µg/ml. The optimal concentration has to be tested out in the specific application. Put lines or spots on the membrane and let dry it gently at room temperature overnight or at 30°C for about 4 hours. No further steps necessary.

The coated and dried membranes can be stored in foil bags with desiccant at +2 to +8°C. The dried membranes are ready for use.

Blocking may not be required. It is to be tested. Blocking effects on membranes can also be achieved by addition of blocking substances into the assay buffer during the following application.

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4. Complementary products

For coating of very inert surfaces such as certain plastics (Polypropylene, Polyethylene, Polycarbonate etc.), it is advisable to carry out a pre-coating with the BioTeZ PreCoating Solution 1. This is also available as a concentrate (PSC1). It can also be used for adsorptive surfaces in order to improve the coating with Polystreptavidin R.
Polystreptavidin R and PSC1 including all buffer solutions are also available as a complete kit.
BioTeZ Polystreptavidin R Coating Kit:
Catalogue Number: BTCK-MC0125 / BTCK-MC0500 for 125 or 500 ml coating solution

For coating of glass surfaces BioTeZ offers a **Polystreptavidin Coating Kit Glass:**
Catalogue Number: BTCKG-MC0125 / BTCKG-MC0500 for 125 or 500 ml coating solution

Furthermore BioTeZ offers **Streptavidin** and **individual coating service**.
Catalogue Number: 10 110 050 for 5 mg rec. Streptavidin

New is the **TAPAS LABELLING kit** for immobilization and enrichment of biomolecules.
The TAPAS system works analogously to the streptavidin-biotin system and can be used as a complement or as a replacement. The target molecule must be labelled with the TAPAS label and the TAPAS capture protein will immobilize specifically and highly efficiently.
Catalogue Number: BTTAP-001 for 1 label

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