Polystreptavidin R

Product Specification & Data Sheet

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 thermostability and a long shelf life. It is suitable for coatings of membranes, beads, biochips, plastics etc.

2. Specifications:

Product Number: 10120100

Description:
Polystreptavidin R is a coating solution concentrate.

Origin:
Recombinant sequence from *Streptomyces avidinii* expressed in *E. coli* bacterial cells. The recombinant product is subsequently polymerized by chemical means.

Molecular Mass:
> 2,000-20,000 kDa; Measured by Field-Flow-Fractionation technology*

Biotin Binding Capacity:
≥ 11,0 U/mg;
The Biotin binding capacity is measured by a HABA assay; Biotin-binding capacity is given in U/mg. Definition U: 1U = binds 1µg Biotin at pH7.

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 0.05M PBS with 0.05% NaN3, 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 room temperature (RT) does not influence the product quality negatively. Shelf life: 2 years from date of manufacturing.

Handling:
Polystreptavidin R is a coating solution concentrate, dilutable with PBS. Avoid solutions above pH 8.

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.

Usage Statement:
Laboratory reagent for research and *in vitro* use only.

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-ratio 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 following concentration ranges are 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 empirically tested 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.