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Datasheet for PG00-06

Protein G Biotin Conjugated

Overview

Description:	Protein G Biotin Conjugated - PG00-06
Item No.:	PG00-06
Size:	500 µg
Applications:	FC, IF
Origin:	Streptococcus sp.

Product Details

Background:	Protein G is a surface protein of two groups of Streptococcal bacteria that has the ability to bind immunoglobulins. Similar to Protein A, but with slightly different specificity, Protein G is an important agent in the purification of proteins due to its ability to bind the Fc region. While native Protein G binds to albumin, recombinant Protein G is designed to contain only immunoglobulin binding domains to ensure the maximum specific IgG binding capacity. Protein G Biotin Conjugated is ideal for investigators involved in Signal Transduction, Molecular Biology, Cancer, and Cell Signaling.
Synonyms:	ProG, Streptococcus G protein, Protein G Biotin Conjugated
Species of Origin:	Streptococcus sp.
Conjugate:	Biotin

Target Details

Purity/Specificity:	Protein G Biotin Conjugated was prepared from chromatographically pure recombinant Protein G. Assay by immunoelectrophoresis resulted in a single precipitin arc against anti-biotin and anti-Protein G. No reaction was observed against anti-Protein A.
Relevant Links:	• UniProtKB - P19909

Application Details

Suggested Applications:	FC, IF (Based on references)

Application Note:	Protein G Biotin Conjugated is suitable as a detection agent for primary antibodies that are of the IgG isotype.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:20,000 - 1:200,000
IHC:	1:1,000 - 1:5,000
WB:	1:10,000 - 1:40,000

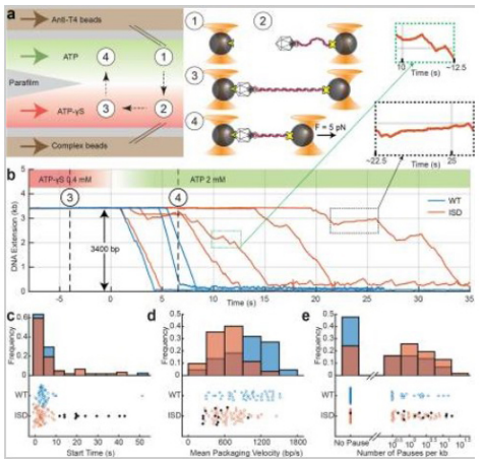
Formulation

Physical State:	Lyophilized
Concentration:	1 by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	10 mg/mL Bovine Serum Albumin (BSA) - Immunoglobulin and Protease free
Reconstitution Volume:	500 µL
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. This product 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



Figure

Motors containing inactive subunits exhibit slower start times, lower packaging speeds, and more pausing.
a Schematic of the optical trapping assay to measure the packaging dynamics of a single T4 motor. A multi-stream laminar flow chamber (left) is used to manipulate samples and buffer. A bead coated with anti-T4 antibodies is captured in one trap in a flow stream containing ATP (green stream; step ①). Another bead conjugated with arrested T4 capsid–gp17-DNA motors is captured in a second optical trap in the stream containing non-hydrolyzable analog ATP-γS (red stream; step ②). The motor bound to DNA in the presence of ATP-γS cannot initiate packaging due to a lack of energy source. To form a tether between the bead pair, the beads are moved close for 1 s and separated apart to detect binding of capsid to antibody (step ③). After a constant force (F = 5 pN) load is applied to the tether, the traps are moved into ATP and packaging is detected as the decrease of DNA extension when DNA is translocated into the capsid by the motor (step ④). b Extension of unpackaged DNA vs. time, under constant force load. Packaging activity is observed within seconds of entering the ATP stream. Representative packaging trajectories with WT (blue) and ISD motors (orange) are shown. c Distribution of the start times of WT (blue, n = 44) and ISD motors (orange, n = 62), defined as the dwell time between entry into the ATP stream and the start of packaging. d Distribution of mean pause-free packaging velocity derived from each packaging trace. ISD motors (orange) show a lower packaging velocity than WT motors (blue). e Histogram of the logarithm of pause frequency, defined as the number of pauses per kb packaged. ISD motors (orange) exhibit more pauses than WT motors (blue) on average. Motors with long start times (black stars; c–e) have a lower packaging velocity and higher pause frequency. The number of trajectories used is indicated by n = #. Fig 4.
PMID: 34772936.

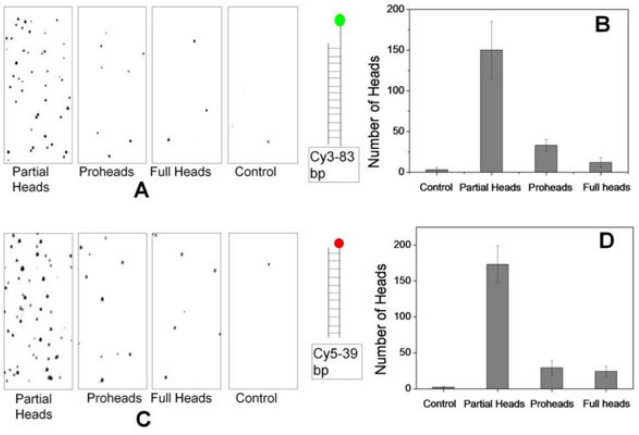
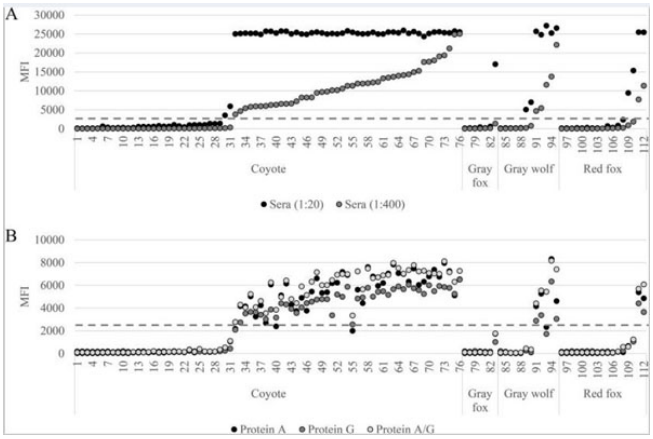


Figure
Single molecule fluorescence measurements of refilled heads. Quantification of packaging by single molecule fluorescence assay. (A and C) Fluorescence images of immobilized T4 heads packaged with Cy3 (83-bp) and Cy5 (39-bp) DNAs, respectively. One-fourth of the 70 µm ×35 µm imaging area is shown in each case. (B and D) Histograms showing the number of heads packaged with Cy3 or Cy5 DNAs. The number of heads showing fluorescence in more than 30 images was averaged in each case. Figure 6. PMID: 21358801.



ELISA
Signal response of Nobuto serum samples from 112 canids profiled with the F1-LPA. (A) Detection of F1 immunoreactivity was accomplished using a genus-specific secondary anti-IgG antibody. (B) Detection of F1 immunoreactivity was accomplished using biotinylated conjugates of staphylococcal protein A (p/n PA00-06), streptococcal protein G (p/n PG00-06), and staphylococcal protein A and streptococcal protein G (A/G), with sera diluted 1:20. The dashed line indicates the threshold for positive and negative samples using an S/N ratio of 10. FIG 2. PMID: 29695520.

References

- Dai, L et al. A viral genome packaging ring-ATPase is a flexibly coordinated pentamer. *Nature Communications* (2021)
- Jeffrey C Chandler et al. A Bead-Based Flow Cytometric Assay for Monitoring Yersinia pestis Exposure in Wildlife. *J Clin Microbiol.* (2018)
- Kondabagil, K et al. Designing a nine cysteine-less DNA packaging motor from bacteriophage T4 reveals new insights into ATPase structure and function. *Virology* (2014)
- Zhang, Z et al. A promiscuous DNA packaging machine from bacteriophage T4. *PloS Biology* (2011)

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