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Datasheet for 009-0602

Human IgG Biotin

Overview

Description:	Human IgG Whole Molecule Biotin Conjugated - 009-0602
Item No.:	009-0602
Size:	1 mg
Applications:	ELISA, Microarray
Origin:	Human

Product Details

Background:	Secreted as part of the adaptive immune response by plasma B cells, immunoglobulin G constitutes 75% of serum immunoglobulins. Immunoglobulin G binds to viruses, bacteria, as well as fungi and facilitates their destruction or neutralization via agglutination (and thereby immobilizing them), activation of the compliment cascade, and opsonization for phagocytosis. The whole IgG molecule possesses both the F(c) region, recognized by high-affinity Fc receptor proteins, as well as the F(ab) region possessing the epitope-recognition site. Both heavy and light chains of the antibody molecule are present. This Human IgG whole molecule is conjugated to biotin (Vitamin H), a small biomolecule that has a large affinity for avidin and streptavidin.
Synonyms:	Human IgG Biotin conjugation, Human immunoglobulin G, Vitamin H, coenzyme R
Species of Origin:	Human
Conjugate:	Biotin
Format:	IgG
Type:	Native Protein
F/P Ratio:	10-20

Target Details

Purity/Specificity:	Human IgG whole molecule Biotin conjugated was prepared from normal serum delipidation, salt fractionation, ion exchange chromatography followed by extensive dialysis against the buffer stated above. Human IgG whole molecule Biotin conjugated was assayed by immunoelectrophoresis resulted in a single precipitin arc against anti-biotin, anti-Human IgG and anti-Human Serum.

Relevant Links:	• 009-0602 SDS

Application Details

Tested Applications:	ELISA
Suggested Applications:	Microarray (Based on references)
Application Note:	Human IgG whole molecule Biotin conjugated has been tested in ELISA and can be utilized as a control reagent in both Western Blotting and ELISA format experiments.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:5000 - 1:50,000
IHC:	1:500
WB:	1:1000

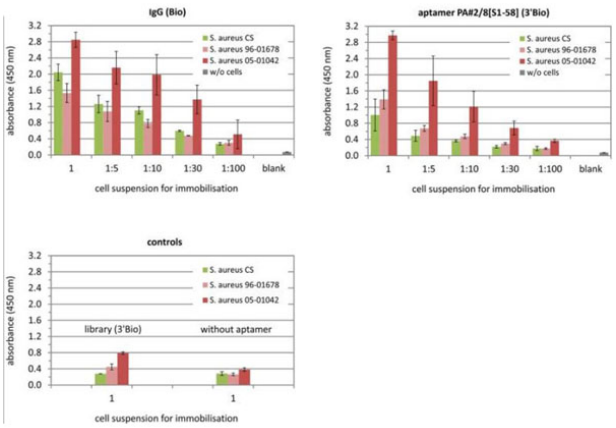
Formulation

Physical State:	Lyophilized
Concentration:	1.0 mg/mL 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:	1.0 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. Human IgG whole molecule Biotin conjugated 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

Binding ability of aptamer PA#2/8[S1-58] to living cells of S. aureus. Two S. aureus isolates 96–01678 and 05–01042 as well as formaldehyde-fixed cells of S. aureus CS (Protein A-producing Cowan strain) were used for coating the microtiter plates. Cell suspensions with an OD600 = 0.7 (1) and further stepwise dilutions (1:5, 1:10, 1:30, 1:100) were applied. 100 nM of PA#2/8[S1-58] (3'Bio) were added for binding in comparison to 0.13 nM IgG (Bio) as positive control for binding to immobilised cells. The blank reaction represents the assay control without any cell coating. Negative controls include reactions with the library (3'Bio) and without biotinylated aptamer or IgG. The results of 2 separate experiments were averaged, whereby each of them was made with 1 (IgG) or 2 (aptamer) replicates of each specific interaction. All experiments contained 1 control reaction per cell type with the library and 3 control reactions per cell type without aptamer or IgG binding reagent. Figure 6. PMID: 27650576.

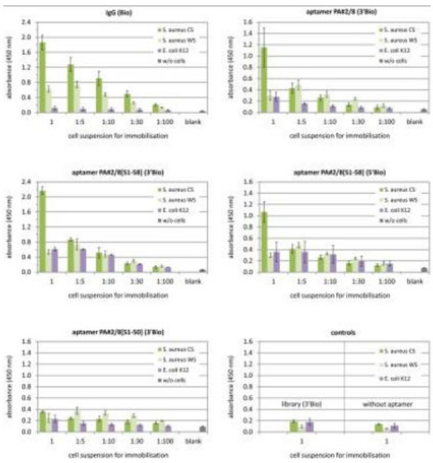
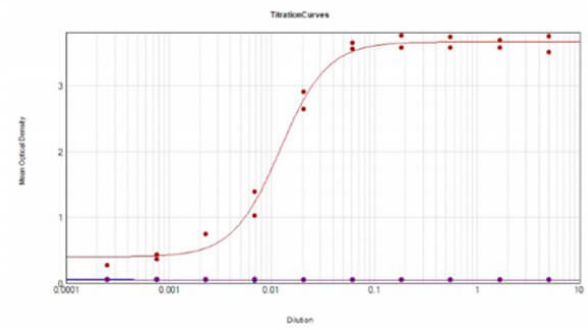


Figure
Evaluation of binding ability of aptamer PA#2/8 and PA#2/8[S1-58] to bacterial cells of S. aureus by ELONA. Formaldehyde-fixed cells of S. aureus CS (Protein A-producing Cowan strain) and S. aureus WS (Protein A-deficient Wood46 Strain) as well as living cells of E. coli K12 as negative control were used for coating the microtiter plates. Cell suspensions with an OD600 = 0.7 (1) and further stepwise dilutions (1:5, 1:10, 1:30, 1:100, corresponding to OD600 = 0.14, 0.07, 0.023, 0.007) were applied. 100 nM of each biotinylated aptamer variants was added, respectively, for binding. The blank reaction represents the assay control without any cell coating. A positive control for binding to immobilised cells is represented by adding of 0.13 nM biotinylated IgG. Negative controls include reactions with the library (3'Bio), non-functional aptamer variant PA#2/8[S1-50] (3'Bio), and without biotinylated aptamer or IgG. Averaged results are shown: 2–3 separate experiments per aptamer probe and 11 experiments with IgG, whereby each of them was made with 2–3 replicates of each specific interaction. All experiments contained 1 control reaction per cell type with the library and 3 control reactions per cell type without aptamer probes or IgG. Figure 5. PMID: 27650576.



ELISA
ELISA Results of Human IgG Whole Molecule Biotin Conjugated. Each well was coated in duplicate with 1.0 µg of Human IgG Whole Molecule Biotin Conjugate. The working dilution is 82,800. The starting dilution of antibody was 5µg/ml and the X-axis represents the Log10 of a 3-fold dilution. This titration is a 4-parameter curve fit where the IC50 is defined as the titer of the antibody. Assay performed using Streptavidin-HRP (p/n S000-03) and TMB substrate (p/n TMBE-1000).

References

- Smith M et al. Age, Disease Severity and Ethnicity Influence Humoral Responses in a Multi-Ethnic COVID-19 Cohort. *Viruses.* (2021)
- Peng T et al. A quantitative enzyme-linked immunoassay (ELISA) to approximate complement-fixing antibody titers in serum from patients with coccidioidomycosis. *Diagn Microbiol Infect Dis.* (2021)
- Stoltenburg, R et al. G-quadruplex aptamer targeting Protein A and its capability to detect Staphylococcus aureus demonstrated by ELONA. *Scientific Reports* (2016)

Disclaimer

No test method can provide total assurance that the hepatitis B virus, hepatitis C virus, human immunodeficiency virus, or any other infectious agents are absent. Thus, all blood products, including purified proteins derived from human blood sources, should be handled at Biosafety Level 2 as recommended by the CDC\NIH manual entitled Biosafety in Microbiological and Biomedical Laboratories for potentially infectious human serum, blood specimens or proteins derived from same. Source material for the human blood product supplied to your facility has been tested for the detection of HIV antibody, Hepatitis B surface antigen, antibody to Hepatitis C, HIV 1 antigen(s), antibody to HTLV - I/II, and syphilis by FDA guidelines. All units were found to be non-reactive/negative for these tests. All human blood source material is collected in FDA licensed centers and is tested with FDA approved test kits.

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