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Datasheet for PA00-03

# Protein A Peroxidase Conjugated

## Overview

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|---|---|
| **Description:** | Protein A Peroxidase Conjugated - PA00-03 |
| **Item No.:** | PA00-03 |
| **Size:** | 2 mg |
| **Applications:** | Dot Blot, ELISA, WB |
| **Origin:** | Staphylococcus aureus |

## Product Details

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| **Background:** | Protein A is a cell wall protein originating from the bacterium Staphylococcus aureus. Protein A binds to immunoglobulins through interaction with the IgG heavy chain within the Fc region. Affinity to Fc may vary depending on IgG species origins or subclasses. Protein A is predicted 42kDa based on sedimentation data and observed to run ~55-56kDa on SDS-Page. This high affinity property makes Protein A essential in the large scale purification of antibodies. Horseradish Peroxidase (HRP) is an enzyme that utilize organic peroxide compounds as electron donors. Naturally provides protection for plants against pathogens, but can be utilized in molecular biology to convert various substrates to detectable compounds (such as in Western Blotting and ELISAs). |
| **Synonyms:** | HRP conjugated protein A, peroxidase conjugated Protein A, Horseradish peroxidase conjugated protein A |
| **Species of Origin:** | Staphylococcus aureus |
| **Conjugate:** | Peroxidase (HRP) |

## Target Details

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| **Purity/Specificity:** | Protein A Peroxidase Conjugation was prepared from chromatographically pure Protein A. Protein A Peroxidase Conjugated was assayed by immunoelectrophoresis resulted in a single precipitin arc against anti-Peroxidase and anti-Protein A. No reaction was observed against anti-Protein G. |
| **Relevant Links:** | • SDS |

## Application Details

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| **Tested Applications:** | Dot Blot |
| **Suggested Applications:** | ELISA, WB (Based on references) |
| **Application Note:** | Protein A Peroxidase Conjugate has been tested by dot blot and is a useful reagent in Western Blotting and ELISA experiments. Protein A Peroxidase can be utilized as a pseudo-secondary detection reagent when used in conjunction with an IgG-based primary antibody and appropriate substrate (such as TMB-1000 or Femtomax-110). |
| **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

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| **Physical State:** | Lyophilized |
| **Concentration:** | 2.0 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) Gentamicin Sulfate. Do NOT add 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

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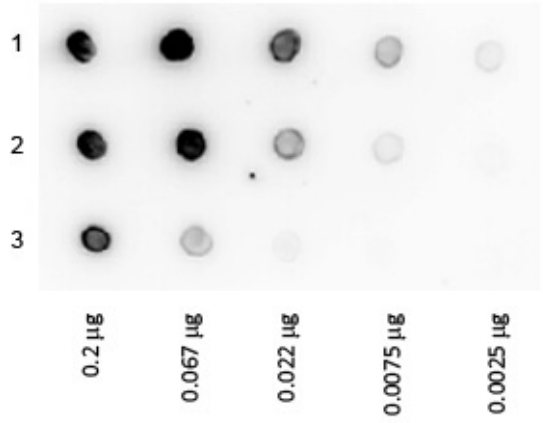
| **Shipping Condition:** | Ambient |
| **Storage Condition:** | Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. Protein A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

| ELISA target and detector | NDO-LID | | |
|---|---|---|---|
| | IgM | IgG | IgG/M (protein A) |
| Sensitivity | 78.0 (73.0–83.0) | 81.6 (77.0–86.1) | 86.3 (82.2–90.3) |
| Specificity | 97.0 (94.0–100) | 95.6 (92.0–99.4) | 93.6 (93.0–100) |
| PPV | 98.3 (96.5–100) | 97.6 (95.5–99.7) | 98.1 (96.3–100) |
| NPV | 66.7 (60.0–73.5) | 70.2 (63.4–77.1) | 76.1 (69.5–82.8) |

**ELISA**
Diagnostic accuracy of detecting IgG and IgG/M antibodies against natural octyl disaccharide-leprosy IDRI diagnostic (NDO-LID) using HRP anti-human IgG (p/n 609-1316), HRP anti-human IgM (p/n 609-4331), and HRP Protein A (p/n PA 00-03). ELISA = enzyme-linked immunosorbent assay; NPV = negative predictive value; PPV = positive predictive value. Results are shown as percent, with confidence intervals in parentheses. Table 5. PMID: 29141725.




**Dot Blot**
Dot Blot of PEROXIDASE Conjugated Protein A. Lane 1: Human IgG. Lane 2: Golden Syrian Hamster IgG. Lane 3: Sheep IgG. Load: 3-fold serial dilution starting at 200 ng. Primary Antibody: none. Secondary antibody: PEROXIDASE Conjugated Protein A at 1:1000 for 60 min at RT. Block: 1% BSA-TTBS 30 min at RT.

## References


- Zhang W et al. GCAF(TMEM251) regulates lysosome biogenesis by activating the mannose-6-phosphate pathway. *Nat Commun.* (2022)
- Munoz et al. Comparison of Enzyme-Linked Immunosorbent Assay Using Either Natural Octyl Disaccharide-Leprosy IDRI Diagnostic or Phenolic Glycolipid-I Antigens for the Detection of Leprosy Patients in Colombia. *The American Journal of Tropical Medicine and Hygiene* (2018)
- Serrano-Coll H et al. Anti-natural octyl disaccharide-leprosy IDRI diagnostic (NDO-LID) antibodies as indicators of leprosy reactions and neuritis. *Trans R Soc Trop Med Hyg.* (2017)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