

SPECIALTY ANTIBODY PRODUCTS

Biotinylated Antibodies

Preparation - High purity N-hydroxysuccinimide biotin is conjugated to affinity purified antibodies and affinity purified F(ab')₂ fragments under defined conditions to produce optimally labeled products. Biotin-conjugated antibodies are purified by gel filtration.

Products are dialyzed into 0.02M sodium phosphate, 0.14M sodium chloride, pH 7.3 with 10% glycerol, 1% bovine serum albumin, and 0.05% sodium azide. Products are adjusted to standard ELISA titers, filtered through 0.22 μm filters and aseptically vialled. All biotinylated products are supplied as liquid.

Specifications - Biotin conjugates are tested for purity at 10 mg/ml by immunoelectrophoresis for the same specificity requirements as the corresponding unconjugated antibodies or fragments. Biotin conjugates are assayed for titer in an ELISA procedure using peroxidase conjugated avidin reagent and the titer for each lot is reported on the product insert.

Storage - Unless otherwise noted, Cappel biotinylated reagents have a shelf-life of a minimum of five years from the original manufacture date when stored as indicated on the vial label and product inserts. Unopened products should be stored at 2-8°C. Once opened, they may be stored at this temperature for a few weeks. For long term storage at -20°C and to prevent freezing, glycerol (40% v/v) may be added.

Applications - Avidin reagents are available with different fluorochrome or enzyme labels. Applications using enzyme labeled reagents include enzyme immunoassays (EIA), cell and tissue staining (for light microscopy), and blot immunostaining. Applications using fluorochrome reagents include immunofluorescence assays (IFA), cell staining (for fluorescent microscopy and cell cytometry), tissue staining and blot immunostaining. The following information gives recommended product group use for various applications:

	Affinity Purified	Aff. Pur. F(ab') ₂ Frag.
Cell and Tissue Staining		
- General	+	•
- Cells with Fc Receptors		+
- Intracellular Staining	•	+
Fluorescence or Enzyme Immunoassay	+	•
Immunoblotting	+	•
	+ Recommended	• Acceptable

Two basic avidin-biotin techniques are the labeled avidin-biotin (LAB) and the bridged avidin-biotin (BRAB) procedures. These methods rely on the binding of biotinylated antibody to immobilized antigen, but differ in the method of labeling.

The LAB method uses avidin directly conjugated with the desired label. Labeled avidin binds to biotinylated antibody, and the bound label is observed or measured. The label can be a fluorochrome as fluorescein or rhodamine. It can be an enzyme as horseradish peroxidase or alkaline phosphatase as well.

With the BRAB technique, bound biotinylated antibody is mixed with an excess of unconjugated avidin. Bound avidin serves to "bridge" to the next reagent, a biotinylated label. Again, a wide range of indicator molecules can be employed.

Advantages - 1. Increased sensitivity versus immunoreactions with directly-labeled antibodies. This advantage results from the extremely high association between avidin and biotin (10¹⁵ Molar⁻¹), avidin's four binding site for biotin, and the high number of biotin groups which can be conjugated to an antibody without the loss of antibody activity. 2. Less background; Biotin labeled antibodies have fewer non-specific interactions than unlabeled antibodies and labeled avidin exhibits less non-specific binding than unlabeled avidin.

Disadvantages - The LAB and BRAB methods require more steps and time that use of directly-labeled antibodies.

55265 0-5°C IgG, Whole Molecule 2 ml
POLYCLONAL ANTIBODY
Anti-Human
Host: goat
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55366 0-5°C IgG, Whole Molecule 2 ml
POLYCLONAL ANTIBODY
Anti-Goat
Host: rabbit
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55587 0-5°C IgG, Whole Molecule 2 ml
POLYCLONAL ANTIBODY
Anti-Mouse
Host: goat
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55596 0-5°C IgG, Whole Molecule 1 ml
POLYCLONAL ANTIBODY
Anti-Mouse
Host: goat
Form: affinity purified F(ab')₂ liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55588 0-5°C IgG, Whole Molecule 2 ml
POLYCLONAL ANTIBODY
Anti-Mouse
Host: sheep
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

CATALOG
NUMBER

55591 **IgG, Whole Molecule** 2 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Mouse
Host: sheep
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections. This antibody is NOT cross reactive with human IgG whole molecule.
Biotinylated

55600 **IgG, Whole Molecule** 1 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Mouse
Host: sheep
Form: affinity purified F(ab')₂ liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections. This antibody is NOT cross-reactive with human IgG whole molecule.
Biotinylated

55589 **IgM, μ-Specific** 2 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Mouse
Host: goat
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55598 **IgM, μ-Specific** 1 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Mouse
Host: goat
Form: affinity purified F(ab')₂ liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55590 **IMMUNOGLOBULINS** 2 ml
0-5°C **POLYCLONAL ANTIBODY**
(Anti-IgG, IgA, and IgM)
Anti-Mouse
Host: goat
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

CATALOG
NUMBER

55599 **IMMUNOGLOBULINS** 1 ml
0-5°C **POLYCLONAL ANTIBODY**
(Anti-IgG, IgA, and IgM)
Anti-Mouse
Host: goat
Form: affinity purified F(ab')₂ liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55699 **IgG, Whole Molecule** 2 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Rabbit
Host: goat
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55701 **IgG, Whole Molecule** 1 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Rabbit
Host: goat
Form: affinity purified F(ab')₂ liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55790 **IgG, Whole Molecule** 2 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Rat
Host: goat
Form: affinity purified liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

55793 **IgG, Whole Molecule** 1 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Rat
Host: goat
Form: affinity purified (F(ab')₂) liquid
Applications: Immunostaining of acetone-fixed frozen and formalin-fixed, paraffin-embedded tissue sections.
Biotinylated

Antibody Affinity Gels

Preparation - Antibody affinity gels are prepared by reaction of purified antibodies to cyanogen bromide-activated Sepharose[®] 4B. Coupled affinity gels are thoroughly washed to remove uncoupled protein. The gels are prepackaged as ready-to-use columns (2 ml settled bed volumes). The gel buffers are 0.02M sodium phosphate, 0.14M sodium chloride, pH 7.3, with 10% glycerol and 0.05% sodium azide.

Specifications - The binding capacities for antibody affinity gels are approximately 4 mg antigen per 2 ml column.

Storage - Unless otherwise noted, Cappel affinity gels have a shelf-life of at least five years from the date of manufacture when stored as indicated on their vial labels and their direction inserts. Generally, unopened gels should be stored at 2-8°C. Once opened, the gels should remain stable at this temperature for several months due to the sodium azide preservative. The gels should be re-equilibrated after use with neutral buffers containing sodium azide or another preservative.

Applications - Antibody affinity gels are useful for positive and negative selections of antigen from culture medium, cell lysates, ascites, sera, etc. They may be used to isolate antigens or to prepare antigen-free solutions. They may be used in radioimmunoassays to bind labeled antigen. They also can be used to collect samples for electrophoresis. Gel beads with bound antigen can be added directly into electrophoresis sample wells.

Gels with antibodies to β -galactosidase may be used to bind β -Gal fusion proteins.

Gels with antibodies to whole IgG may be used to isolate both monoclonal and polyclonal antibodies or to prepare immunoglobulin-free solutions. Because the gel antibodies are directed against whole IgG, these antibodies may bind IgM, IgA and other immunoglobulins by binding to the light chains in common with IgG. The gels will have greater capacity for IgG than for the other immunoglobulins.

CATALOG
NUMBER

55696 0-5°C	ANTIBODY AFFINITY GEL Anti-Rabbit IgG Host: goat (affinity purified) A gel with covalently bound goat antibodies purified by protein A chromatography. It is intended for the identification, isolation and purification of rabbit IgG.	2 ml
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55786 0-5°C	ANTIBODY AFFINITY GEL Anti-Rat IgG Host: goat (affinity purified) A gel with covalently bound goat antibodies purified by protein A chromatography. It is intended for the identification, isolation and purification of rat IgG.	2 ml
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55978 0-5°C	ANTIBODY AFFINITY GEL Anti-β-Galactosidase Host: rabbit A gel with covalently bound rabbit antibodies purified by protein A chromatography and repeatedly absorbed with immobilized lysate from β -gal <i>Escherichia coli</i> strains. This antibody portion has minimal cross-reactivity to other <i>E. coli</i> proteins in immunoblotting. It is intended for the identification, isolation and purification of β -galactosidase-containing fusion proteins. The column capacity is at least 2 mg β -galactosidase.	2 ml
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55259 0-5°C	ANTIBODY AFFINITY GEL Anti-Human IgG Host: goat (affinity purified) A gel with covalently bound goat antibodies purified by protein A chromatography. It is intended for the identification, isolation and purification of human IgG.	2 ml
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55581 0-5°C	ANTIBODY AFFINITY GEL Anti-Mouse IgG Host: goat (affinity purified) A gel with covalently bound goat antibodies purified by protein A chromatography. It is intended for the identification, isolation and purification of mouse IgG.	2 ml
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Peroxidase Anti-Peroxidase (PAP) Complexes

Preparation - Peroxidase anti-peroxidase (PAP) is a purified mixture of purified, soluble immunocomplexes averaging three molecules of horseradish peroxidase to two molecules of anti-peroxidase antibodies. The Cappel PAP reagent is prepared by the Sternberger method. Anti-peroxidase antibodies are affinity purified from antiserum by equivalence point precipitation with peroxidase. Washed immunoprecipitate is solubilized at low pH. Excess peroxidase is added and pH neutralized to form soluble PAP complexes. The soluble PAP complexes are purified of excess peroxidase by repeated salt fractionation.

Purified goat, rabbit, and sheep PAP are dialyzed in 0.02M sodium phosphate, 0.14M sodium chloride, pH 7.3, and adjusted to 20 mg/ml, filtered through 0.22 µm filters, vialled and lyophilized. Mouse PAP is in the same buffer, adjusted to 5 mg/ml, filtered, vialled and lyophilized.

Storage - Unless otherwise labeled, PAP products have a shelf-life of a minimum of five years from the original date of manufacture when stored as indicated on the vial labels and product inserts.

Lyophilized PAP should be stored at or below 2-8°C. Reconstituted PAP may be stored only a few days at this temperature. For long term storage at -20°C or lower, PAP may be aliquoted. Avoid repeated freezing and thawing.

Applications - PAP is useful in immunostaining cells and tissues for light and electron microscopy. It may also be used for immunoblot staining and ELISA. The following is an illustration for the PAP method for rabbit PAP:

Advantages - 1. Lower background. 2. Higher sensitivity than using antibodies directly conjugated with peroxidase.

Disadvantages - 1. The PAP procedure requires additional reagents and requires extra steps as compared to direct use of peroxidase conjugated antibodies.

References

1. Sternberger, N.H., et al., J. Histochem. Cytochem., 8, 315 (1970)

55967 0-5°C	PEROXIDASE ANTI-PEROXIDASE POLYCLONAL ANTIBODY PAP Host: goat Form: lyophilized Applications: ELISA; Immunoblotting. Prepared as 20 mg/ml.	1 ml
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59371 0-5°C	PEROXIDASE ANTI-PEROXIDASE POLYCLONAL ANTIBODY PAP Host: mouse Form: lyophilized Applications: ELISA; Immunoblotting. Prepared as 5 mg/ml.	1 ml
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55968 0-5°C	PEROXIDASE ANTI-PEROXIDASE POLYCLONAL ANTIBODY PAP Host: rabbit Form: lyophilized Applications: ELISA; Immunoblotting. Prepared as 20 mg/ml.	1 ml
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55969 0-5°C	PEROXIDASE ANTI-PEROXIDASE POLYCLONAL ANTIBODY PAP Host: sheep Form: lyophilized Applications: ELISA; Immunoblotting. Prepared as 20 mg/ml.	1 ml
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PURIFIED ANTIGENS

- | | |
|---|---|
| <input type="checkbox"/> <i>Red Blood Cells</i> | <input type="checkbox"/> <i>Whole Sera</i> |
| <input type="checkbox"/> <i>Complement Components</i> | <input type="checkbox"/> <i>Tissue Powders</i> |
| <input type="checkbox"/> <i>Liver S9 Homogenates</i> | <input type="checkbox"/> <i>Myeloma Ascites</i> |
| <input type="checkbox"/> <i>Purified Proteins</i> | <input type="checkbox"/> <i>Gamma Globulins</i> |

Preparation - Most products are prepared from blood or other tissues of non-immunized animals. Products derived from human sources are from donors whose serum tested negative by the current FDA required tests. No tests can insure the complete safety of any product. All biomaterials should always be treated as being potentially infectious.

Whole Sera: Whole blood is allowed to clot and all clotted materials are removed. Raw serum is pooled, delipidated, dialyzed into 0.02M sodium phosphate, 0.14M sodium chloride, pH 7.3, filtered, vialled and lyophilized.

Complement Components: They are lyophilized, liquid portions of whole blood prepared at approximately 0°C temperatures. Fresh blood is chilled in ice and cells and debris are removed at ice temperature by centrifugation and filtration. The liquid complement is immediately vialled, frozen and lyophilized.

Purified Proteins and Gamma Globulins: These products are purified using multi-step procedures which include salt fractionation and various chromatographic separations including gel filtration, ion exchange and bioaffinity chromatography. Most products are dialyzed into 0.01M sodium phosphate, 0.07M sodium chloride, pH 7.3. All products are adjusted to standard protein concentration, filtered through 0.22 µm filters and vialled aseptically. All products except human IgM and human fibronectin are lyophilized.

Specifications - Most products are tested for identity and immunochemical purity by immunoelectrophoresis and/or double immunodiffusion. Purified protein may be additionally tested for protein purity using SDS gel electrophoresis, FPLC or HPLC.

Complement Components: These purified antigens are tested in serial dilutions for activity in hemolytic assays. Activity is indicated on the product insert.

Total protein content is measured using the absorbance at 280 nm or the Biuret or other protein assay.

Storage - Unless otherwise noted, Cappel antigens have a shelf-life of a minimum of five years from the original manufacture date. This assumes storage as recommended on the vial labels and product inserts. Unopened, lyophilized products generally should be stored at 2-8°C. Once reconstituted, they may be stored for only a few days at this temperature without preservatives. They may be aliquoted and frozen at -20°C or lower for long term storage. Liquid products such as human IgM and human fibronectin should be stored at 2-8°C. Microbial contamination should be avoided.

Human Antigens

55912 0-5°C	ALBUMIN, HUMAN Purified antigen lyophilized	50 mg
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55883 0-5°C	ALBUMIN, HUMAN Purified antigen lyophilized FITC Conjugated	25 mg
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59414 -20°C	APOLIPOPROTEIN AI Human Purified antigen lyophilized	500 µg
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59415 -20°C	APOLIPOPROTEIN AII Human Purified antigen lyophilized	500 µg
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