



**medac**  
diagnostika

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**KPL**

Power Your  
Immunoassays

Contact us by email at [custserv@kpl.com](mailto:custserv@kpl.com).  
ISO 9001:2008 Registered



Power Your  
Immunoassays



*See More  
SIGNAL.  
Less Noise.*

Antibodies & Conjugates

## Power Your Immunoassays

For nearly 35 years KPL has been a leader in developing and manufacturing high-quality immunochemicals for life science researchers and *in vitro* diagnostics. Since pioneering the production of affinity purified secondary antibodies to our current offering of more than 800 reagents and complete assay kits for protein visualization, KPL has been here to serve your needs.

At KPL we know purity, sensitivity, and availability are important to you, which is why we only sell what we make, and everything is manufactured in a plant whose quality management system is registered to ISO 9001:2008. We also maintain virtually 100% in-stock availability for same-day shipment.

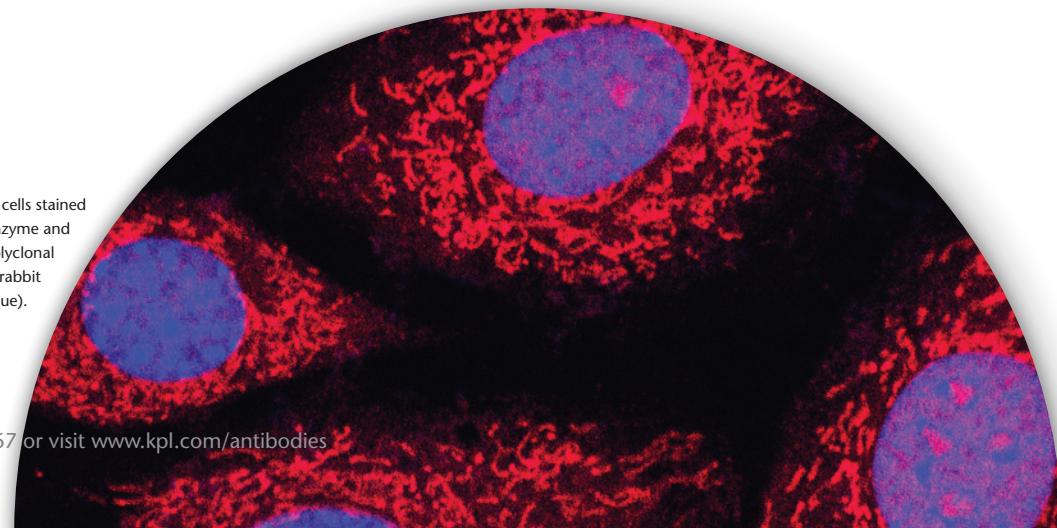
Whether our reagents are used in a single experiment or commercially by leading diagnostic kit manufacturers, KPL always adheres to the highest quality standards. This is why with KPL products you see more signal with less noise.

## Not All Antibodies Are the Same

Immunoassay techniques may differ, but the essential component that determines the level of sensitivity and specificity is the antibody. KPL's proprietary purification technology yields antibodies with defined specificities, minimal background, and consistent lot-to-lot performance. For these reasons, KPL antibodies have become the industry benchmark.

Since our initial production of affinity purified secondary antibodies in 1979, KPL has shown again and again that not all antibodies are the same. Not only does KPL use a unique affinity purification process, but we are also the original manufacturer.

Whether developing high-performance immunoassays, such as ELISA, Western blotting, or immunohistochemistry, KPL's experience and ISO 9001:2008 registration ensures that you are getting reliable antibodies that meet your high standards.



Confocal fluorescence micrograph of HeLa cells stained with monoclonal antibody against mitochondria enzyme and Cy3-conjugated anti-mouse antibody (red); rabbit polyclonal antibody to histones in DNA and Cy5-conjugated anti-rabbit antibody (blue).

## Six Reasons to Choose KPL Antibodies

There are many reasons you should be particular when choosing an antibody. Below are just six of the reasons that set KPL's antibodies apart.

### 1. We Make What We Sell

Unlike most antibody suppliers, KPL makes what it sells. This enables KPL to control the entire process from raw materials to delivery, service, and support. Unlike resellers, KPL has control over the purity, specificity, and sensitivity of its antibodies.

### 2. High-Performing Antibodies

KPL's affinity purification process eliminates potentially interfering serum proteins and antibodies that increase background and cause cross-reactivity issues. As a result, KPL offers antibodies with a high degree of sensitivity and specificity.

### 3. Broad Product Offering

KPL offers more than 600 secondary antibodies directed to the immunoglobulins of 20 animal species labeled with 18 tags, including enzymes, fluorophores, biotin, and gold. In addition, KPL offers a primary antibody line that recognizes a variety of bacteria species significant in food contamination and infectious disease.

### 4. ISO Quality System

KPL develops and manufactures antibodies using the ISO 9001: 2008 quality management system. Customers can be assured that KPL antibodies consistently meet high standards for quality and performance.

### 5. Time-tested, Partner Proven

KPL is an approved antibody supplier and trusted source to leading biotech/diagnostic companies, as well as academic and research laboratories. Many leading manufacturers utilize KPL antibodies in a variety of diagnostic kits for AIDS, tropical diseases, food testing, and cancer.

### 6. Antibodies in Stock

KPL exceeds 98% product availability. Our antibodies are in-stock and ready for same-day shipment. Most KPL antibodies are lyophilized and can be shipped worldwide at ambient temperatures.

## Expanding Portfolio of Secondary Antibodies

KPL's growing line of secondary polyclonal antibodies consists of more than 600 antibodies to immunoglobulins from 20 animal species. All antibodies are produced in goat except anti-deer, anti-goat, and anti-sheep, which are produced in rabbit. Our secondary antibodies are available with many labeling options for sensitive immunoassays:

- Unlabeled
- Enzyme-labeled:  
Alkaline Phosphatase (AP)  
Horseradish Peroxidase (HRP)
- Biotinylated
- Fluorochrome-labeled:  
Fluorescein (FITC)  
Rhodamine (TRITC)  
Cyanine Dyes (Cy3, Cy5)  
R-Phycoerythrin (RPE)  
DyLight (405, 488, 549, 594, 633, 649, 680, and 800)
- Gold-labeled
- Antibody Form  
Whole IgG  
 $F(ab')_2$  Fragments
- Specificities  
Anti-IgG (H+L)  
Anti-Heavy-Chain Specific ( $\gamma$ ,  $\mu$ ,  $\alpha$ ,  $\epsilon$ )  
Anti-IgG Fc Fragment-Specific
- Adsorptions

Select antibodies are adsorbed against closely related species.

*See pages 6 – 15 for product listing.*

## Custom and Bulk Antibodies and Services

KPL's proprietary technology coupled with almost 35 years of antibody production experience has established us as a trusted and reliable source for diagnostic, biopharmaceutical, and food pathogen test manufacturers. Our antibodies are vital components in millions of human and animal *in vitro* diagnostic kits, in-process testing protocols, and high-throughput screening applications. KPL is ISO 9001:2008-registered and welcomes customer audits of our management systems. Our services include:

- Bulk and custom packaging
- Modifications to existing products
- Custom antibody purifications
- Custom antibody conjugations

For more information on our custom and bulk services, please visit [www.kpl.com/oem](http://www.kpl.com/oem)

## Detection Using Primary Antibodies

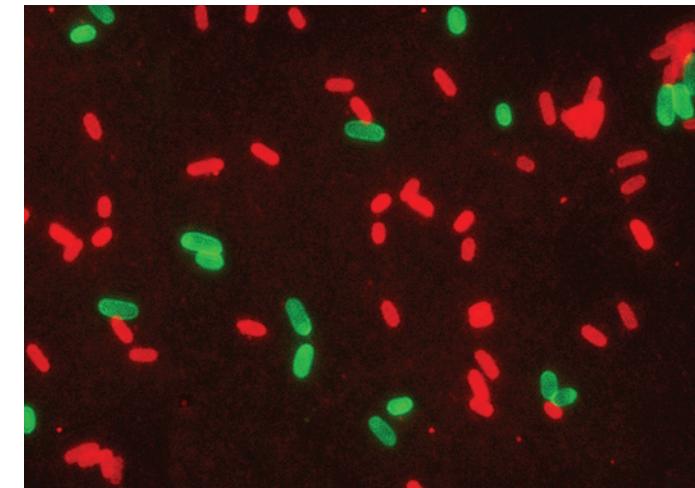
**BacTrace® Antibodies to Bacteria and Bacterial Antigens**  
BacTrace antibodies provide a powerful set of tools for the detection of food-borne pathogens and infectious disease agents. They are prepared by a proprietary method that yields highly characterized antibodies with excellent specificity and sensitivity. The antibodies recognize both cell surface and intracellular antigens of bacteria and are more sensitive than many commercially available monoclonal antibodies. BacTrace antibodies are ideal for use in screening samples in the research laboratory, environmental monitoring, and food and beverage analysis.

### Molecular Grade Anti-Bacteria Antibodies to Food-borne Pathogens

Molecular grade antibodies are available to *Salmonella* and Shiga toxin-producing *E. coli* O157:H7. The antibodies are specially processed and tested to ensure that contaminating *Salmonella* or *E. coli* DNA are not detectable by real-time PCR. These antibodies are particularly useful for immuno-enrichment of bacteria prior to testing by PCR or other molecular methods.



BacTrace antibodies are available unlabeled and labeled with enzymes, fluorophores, and other tags for use in ELISA, Western blot, immunohistochemistry, or fluorescence microscopy. Positive control antigens are also offered.



BacTrace Anti-*E. coli* O157:H7 antibody labeled with DyLight 488 (green) directly detects *E. coli* O157:H7. BacTrace Anti-*Salmonella* (CSA-1) antibody labeled with DyLight 549 (red) directly detects *Salmonella*.

## KPL's Affinity Purification Process Makes the Difference

### Immunogen Quality: A Critical Factor

Quality control of the antigen is a critical component of KPL's production process. Pure immunogen results in a more potent and specific antibody. KPL has its own unique immunization process to generate high titer, specific antiserum.

### Careful Animal Selection and Screening

The selection/rejection of antisera is a critical component of KPL's ability to produce high-quality antibodies. Prior to immunization, animals are carefully screened and disqualified if found reactive toward the antigen. Multiple animals are involved in the production of one antibody, thus allowing for the collection of the most potent antibodies possible. In addition, the pooling of antiserum from multiple animals minimizes natural serum variability, resulting in uniform large-scale antibody lots.

### Multiple Quality Checks for Purity and Potency

Production bleeds are obtained from the animals and are screened for potency. Production bleeds that do not meet quality requirements are rejected. The immunoglobulin fraction of the antisera is then isolated and tested for purity as well as potency against the antigen. Finally, the material is purified over an affinity column and once again tested for potency and cross-reactivity.

### Collective Purification

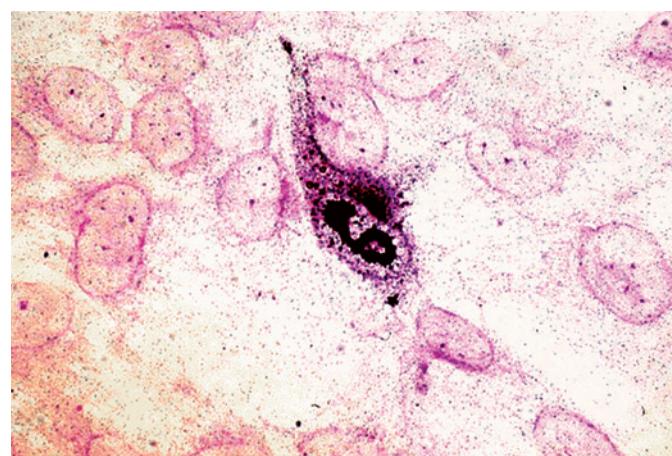
Polyclonal antibodies recognize different regions on IgG heavy and light chains. Some of these regions also are similar to IgA and IgM heavy and light chains. Therefore, these antibodies consist of subpopulations that also recognize IgM and IgA. To make an antibody specific for the IgG heavy chain, these subpopulations must be removed or reduced. To accomplish this, the purified antibodies are passed over affinity columns with immobilized whole IgM and IgA antibodies containing both heavy and light chains. Antibodies that cross-react bind to the column. Antibodies specific for the IgG heavy chain pass through the column and collected for the final product.

### Cross-Adsorption

Immunoglobulins of related animal species often share similar epitopes derived from homologous protein structure and sequence. For example, affinity purified antibodies against mouse IgG may recognize epitopes on human IgG. To minimize cross reactivity between mouse and human species, antibodies to mouse immunoglobulins are adsorbed against immobilized human serum on an affinity column. The resulting antibody, Anti-Mouse IgG, Human Serum Adsorbed (HSA), is highly specific to mouse IgG with minimal reactivity to human IgG or to any other human serum components. Select antibody preparations are further adsorbed against multiple animal species to reduce reactivity to shared regions among these species.

### Final Steps

The final steps in antibody preparation include filtrations to concentrate the target molecules and remove particulate matter. In-process testing is conducted prior to lyophilization to assure continued conformance to specifications at this stage. Antibodies are then lyophilized, or freeze-dried, to remove water and stabilize the product. Prior to release, antibodies undergo rigorous testing for specificity, sensitivity, and background.



CMV infected cells, human anti-CMV serum with gold-labeled goat anti-human IgG (H+L), 5 nm with Microscopy Silver Enhancer Kit and Eosin.

## KPL's Affinity Purification Process



## Find the Right Antibody for Your Application

An overview of the main classes of KPL's secondary antibodies listed below will help to guide you in choosing the appropriate antibody for your application.

### Anti-Heavy and Light Chain (H+L) Antibodies

Antibodies to IgG heavy and light chains (H+L) recognize epitopes on both heavy and light chains of IgG and may react with other immunoglobulins classes that have light chains in common with IgG. These antibodies are versatile choices for many different assays.

### Anti-Heavy Chain-Specific Antibodies

Anti-heavy chain-specific antibodies, IgG ( $\gamma$ ), IgM ( $\mu$ ), IgA ( $\alpha$ ), and IgE ( $\epsilon$ ) react specifically with the heavy chain indicated in the product name. Heavy chain-specific antibodies are adsorbed against the whole antibody molecule of other immunoglobulin classes to remove shared heavy and light chain reactivity. For example, gamma-specific products are cross-adsorbed on resins containing species-specific IgM and IgA antigens. These antibodies are useful in assays where "heavy chain only" reactivity is desired.

### Anti-IgG+IgM (H+L) Antibodies

Antibody products directed against IgG and IgM (H+L) contain an equal mixture of two antibodies that recognize reactive sites specific for IgG and IgM. Every product lot is tested for reactivity to IgG and IgM. The level of reactivity that may occur to other immunoglobulin classes through shared light chain activity is not tested. These products are recommended when monitoring IgG and IgM levels is necessary.

### Anti-IgA+IgG+IgM (H+L) Antibodies

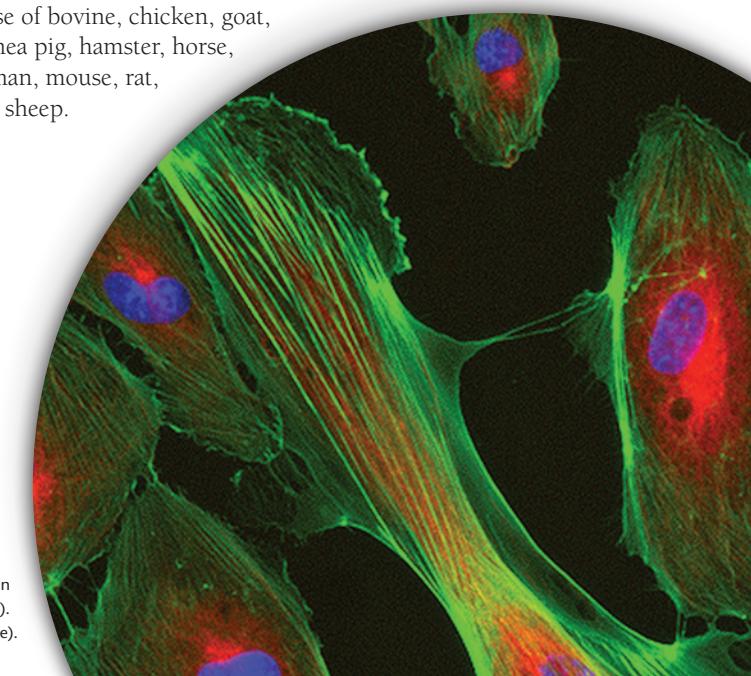
Antibodies directed against IgA+IgG+IgM (H+L) contain an equal mixture of three antibodies that recognize reactive sites specific to IgA, IgG, and IgM. Other shared sites through light chain cross-reactivity also may be present. Every product lot is tested for reactivity to each of the three immunoglobulin classes. Anti-IgA+IgG+IgM (H+L) antibodies are best used when measurement of all three classes of antibodies needs to be controlled in an immunoassay.

### F(ab')<sub>2</sub> Fragment Affinity Purified Antibodies

F(ab')<sub>2</sub> fragment antibodies are specifically developed to prevent whole antibody molecules from binding to Fc receptors on cells. F(ab')<sub>2</sub> antibodies also can be used to increase sensitivity in immunohistochemical applications where smaller antibody molecules are needed to diffuse through tissues.

### Serum Adsorbed

Antibodies are often used in assays where proteins from human or other animal species are present. To minimize nonspecific reactivity to human serum components, anti-mouse antibodies and some anti-rabbit antibodies are passed over an affinity column containing immobilized human serum proteins and are referred to as HSA. Select anti-mouse antibodies are further adsorbed against rat or rabbit serum proteins and are referred to as rat serum adsorbed (RtSA) or rabbit serum adsorbed (RbSA), respectively. Anti-rabbit and anti-rat IgG (H+L) antibodies undergo similar adsorptions to reduce reactivity to unwanted human or mouse immunoglobulins, respectively. KPL offers antibodies that have been cross-adsorbed to multiple species' immunoglobulins to minimize cross-reactivity. They are referred to as Extra Serum Adsorbed, or XSA. The species include those of bovine, chicken, goat, guinea pig, hamster, horse, human, mouse, rat, and sheep.



HMVEC-L primary endothelial cells F-actin detected with DY554-Phalloidin (rendered green). Microtubules stained with DyLight 649 (red). Nuclei detected with DAPI (blue).







Description	Unlabeled	HRP	AP	ReserveAP™	Biotin	Gold	FITC	TRITC	RPE	Cy3	Cy5	DyLight 405	DyLight 488	DyLight 549	DyLight 594	DyLight 633	DyLight 649	DyLight 680	DyLight 800	
<b>Anti-Sheep</b>																				
IgG (H+L)	01-23-06 1.0 mg	14-23-06 0.5 mg		151-23-06 0.5 mg	16-23-06 0.5 mg		02-23-06 0.5 mg			072-01-23-06 1.0 mg	072-02-23-06 1.0 mg		072-03-23-06 1.0 mg				072-05-23-06 1.0 mg	072-06-23-06 1.0 mg	072-07-23-06 1.0 mg	
IgG ( $\gamma$ )	01-23-02 1.0 mg	04-23-02 0.1 mg	05-23-02 0.1 mg				02-23-02 0.5 mg													
IgM ( $\mu$ )	01-23-03 1.0 mg	04-23-03 0.1 mg	05-23-03 0.1 mg				02-23-03 0.5 mg													
<b>Anti-Swine</b>																				
IgG (H+L)	01-14-06 1.0 mg	14-14-06 0.5 mg		151-14-06 0.5 mg			02-14-06 0.5 mg			072-01-14-06 1.0 mg	072-02-14-06 1.0 mg		072-03-14-06 1.0 mg	072-04-14-06 1.0 mg			072-05-14-06 1.0 mg	072-06-14-06 1.0 mg	072-07-14-06 1.0 mg	
IgG ( $\gamma$ )	01-14-02 1.0 mg	04-14-02 0.1 mg	05-14-02 0.1 mg		16-14-02 0.5 mg		02-14-02 0.5 mg													
IgM ( $\mu$ )	01-14-03 1.0 mg	04-14-03 0.1 mg	05-14-03 0.1 mg		16-14-03 0.5 mg		02-14-03 0.5 mg													
<b>Anti-Turkey</b>																				
IgG (H+L)	01-26-06 1.0 mg	14-26-06 0.5 mg	15-26-06 0.5 mg				02-26-06 0.5 mg													
<b>Other Conjugates</b>																				
Anti-Biotin										*58-40-06 1.0 mL  **57-40-06 3.0 mL										
										KPL offers custom antibody purifications and conjugations. Visit <a href="http://www.kpl.com/OEM">www.kpl.com/OEM</a>										
<b>Streptavidin</b>																				
		14-30-00 0.5 mg	15-30-00 0.5 mg			*58-30-06 1.0 mL	072-30-00 1.0 mg	073-30-00 1.0 mg	0718-30-00 1.0 mL		072-01-30-00 1.0 mg	072-02-30-00 1.0 mg	072-08-30-00 1.0 mg	072-03-30-00 1.0 mg	072-04-30-00 1.0 mg	072-09-30-00 1.0 mg	072-10-30-00 1.0 mg	072-05-30-00 1.0 mg	072-06-30-00 1.0 mg	072-07-30-00 1.0 mg
		474-3000 1.0 mL (For IHC)	475-3000 1.0 mL (For IHC)			**57-30-06 3.0 mL							042-08-30-00 0.1 mg	042-03-30-00 0.1 mg	042-04-30-00 0.1 mg	042-09-30-00 0.1 mg	042-10-30-00 0.1 mg	042-05-30-00 0.1 mg	042-06-30-00 0.1 mg	042-07-30-00 0.1 mg
<b>Protein A</b>																				
		14-50-00 0.5 mg																		
<b>Conjugate Stabilizers for Peroxidase and Phosphatase-labeled Antibodies</b>																				
* 5 nm ** 40 nm																				
KPL conjugate stabilizers are effective at stabilizing enzyme conjugates in diluted form for extended periods of time with minimal loss of activity or function.																				
<b>Conjugate Stabilizers</b>																				
HRPStabilizer		54-15-01 200 mL																		
APStabilizer			55-15-00 200 mL																	

**BacTrace® Antibodies to Bacteria and Positive Controls**

Description	Unlabeled	HRP	AP	ReserveAP™	FITC	Biotin	DyLight 488
<b>Antibodies to Food Pathogens</b>							
Goat Anti-Campylobacter Species	01-92-93 1.0 mg	04-92-93 0.1 mg	05-92-93 0.1 mg		02-92-93 0.5 mg		
Goat Anti- <i>E. coli</i> O157:H7	01-95-90 1.0 mg	04-95-90 0.1 mg	05-95-90 0.1 mg		02-95-90 0.5 mg	16-95-90 0.5 mg	
Goat Anti- <i>E. coli</i> O157:H7 Molecular grade	01-95-90-MG 1.0 mg						
Goat Anti- <i>E. coli</i> O26	01-95-92 1.0 mg	04-95-92 0.1 mg			16-95-92 0.5 mg	072-03-95-92 0.5 mg	
	011-95-92 0.1 mg						
Goat Anti- <i>E. coli</i> O111	01-95-91 1.0 mg	04-95-91 0.1 mg			16-95-91 0.5 mg	072-03-95-91 0.5 mg	
	011-95-91 0.1 mg						
Goat Anti- <i>E. coli</i> O103	011-95-93 0.1 mg	04-95-93 0.1 mg			16-95-93 0.5 mg	072-03-95-93 0.5 mg	
	01-95-93 1.0 mg						
Goat Anti- <i>E. coli</i> O121	011-95-95 0.1 mg	04-95-95 0.1 mg			19-95-95 0.5 mg	072-03-95-95 0.5 mg	
	01-95-95 1.0 mg						
Goat Anti- <i>E. coli</i> O145	011-95-94 0.1 mg	04-95-94 0.1 mg			16-95-94 0.5 mg	072-03-95-94 0.5 mg	
	01-95-94 1.0 mg						
Goat Anti- <i>E. coli</i> O45	011-95-96 0.1 mg	04-95-96 0.1 mg			16-95-96 0.5 mg	072-03-95-96 0.5 mg	
	01-95-96 1.0 mg						
Goat Anti-Listeria Species	01-90-90 1.0 mg	04-90-90 0.1 mg		051-90-90 0.1 mg	02-90-90 0.5 mg	16-90-90 0.5 mg	
Goat Anti-Listeria Species, High Sensitivity	01-90-95 1.0 mg	04-90-95 0.1 mg				16-90-95 0.5 mg	072-03-90-95 1.0 mg
Goat Anti-Salmonella Common Structural Antigen (CSA-1)	01-91-99 1.0 mg	04-91-99 0.1 mg		05-91-99 0.1 mg	02-91-99 0.5 mg	16-91-99 0.5 mg	
Goat Anti-Salmonella (CSA-1) Molecular grade	01-91-99-MG 1.0 mg						
Rabbit Anti-Shigella Species	01-90-01 1.0 mg	04-90-01 0.1 mg				16-90-01 0.5 mg	072-03-90-01 0.5 mg
Rabbit Anti-Vibrio cholerae	01-90-50 0.5 mg	04-90-50 0.1 mg				16-90-50 0.5 mg	072-03-90-50 1.0 mg
Rabbit Anti-Vibrio Species	01-90-02 1.0 mg	04-90-02 0.1 mg				16-90-02 0.5 mg	072-03-90-02 0.5 mg

*Coming Soon!***BacTrace® Antibodies to Bacteria and Positive Controls**

Description	Unlabeled	HRP	AP	ReserveAP™	FITC	Biotin	DyLight 488
<b>Antibodies to Infectious Disease Agents</b>							
Goat Anti-Borrelia burgdorferi	01-97-91 1.0 mg	04-97-91 0.1 mg			051-97-91 0.1 mg	02-97-91 0.5 mg	
Goat Anti-Borrelia Species	01-97-92 1.0 mg	04-97-92 1.0 mg				02-97-92 0.5 mg	
Goat Anti-Helicobacter pylori	01-93-94 1.0 mg	04-93-94 0.1 mg				02-93-94 0.5 mg	
Rabbit Anti-Legionella Species	01-90-03 1.0 mg	04-90-03 0.1 mg					16-90-03 0.5 mg
Rabbit Anti-Yersinia Species	01-90-04 1.0 mg	04-90-04 0.1 mg					072-03-90-04 0.5 mg
<b>Other Anti-Bacteria Antibodies</b>							
Goat Anti-Renibacterium salmoninarum	01-96-91 1.0 mg	04-96-91 0.1 mg			05-96-91 0.1 mg	02-96-91 0.5 mg	

**Positive Bacterial Controls**

Description	Catalog #	Description	Catalog #	Description	Catalog #
Borrelia burgdorferi	50-97-91 1 vial	<i>E. coli</i> O145	50-95-94 1 vial	<i>Shigella</i> Species	50-90-01 1 vial
Campylobacter jejuni	50-92-93 1 vial	<i>E. coli</i> O45	50-95-96 1 vial	<i>Vibrio</i> Species	50-90-02 1 vial
<i>E. coli</i> O157:H7	50-95-90 1 vial	<i>Helicobacter pylori</i>	50-93-94 1 vial	<i>Yersinia enterocolitica</i>	50-90-04 1 vial
<i>E. coli</i> O26:H11	50-95-92 1 vial	<i>Legionella pneumophila</i>	50-90-03 1 vial		
<i>E. coli</i> O111:H8	50-95-91 1 vial	<i>Listeria</i> species	50-90-90 1 vial		
<i>E. coli</i> O103	50-95-93 1 vial	<i>Renibacterium salmoninarum</i>	50-96-91 1 vial		
<i>E. coli</i> O121	50-95-95 1 vial	<i>Salmonella typhimurium</i>	50-74-01 1 vial		

**To Place an Order or for Customer Service**

Call: Toll Free 800.638.3167 or 301.948.7755, enter 4.  
 Customer Service representatives are available to receive orders Monday through Friday, 8:00 am to 6:00 pm Eastern Time.

Fax: 301.948.0169 Attention: Customer Service

E-Mail: custserv@kpl.com

Online: www.kpl.com

Write: KPL, Inc.  
 910 Clopper Road  
 Gaithersburg, MD 20878 USA  
 Attention: Customer Service

Federal ID Number: 52-1159597 Small Business Vendor

**For Technical Service**

Call: Toll Free 800.638.3167 or 301.948.7755, enter 5.  
 Technical Service representatives are available Monday through Friday, 8:30 am to 5:00 pm Eastern Time.

Fax: 301.948.0169 Attention: Technical Service

E-Mail: techserv@kpl.com

Write: KPL, Inc.  
 910 Clopper Road  
 Gaithersburg, MD 20878 USA  
 Attention: Technical Service