monoclonal bands, a sample dilution of 1:5 is recommended for the IgM and Lambda patterns. When typing minimonoclonal specimens, if the sample IgG level is elevated, the serum should be diluted 1:20. Serum should be tested in all five antisera reaction areas of the gel. Wherever the band reacts with all five antisera, the protein in question is a monoclonal gammopathy.

The antisera should be stored at 2 to 6°C and is stable until the expiration date indicated on the vial.

Antisera vials in the kit contain monospecific antisera to human immunoglobulin heavy chains, IgG, IgM, and IgA, and to human light chains, Kappa and Lambda. The antisera have been prepared in sheep and goat. Each vial of antiserum contains a stabilizer and sodium azide as a preservative.

The fixative contains 10% sulfosalicylic acid and 10% acetic acid. The fixative should be a clear yellow solution.

For Sales, Technical and Order Information and Service Assistance, call 800-231-5663 toll free.

**PERFORMANCE CHARACTERISTICS**

Specimens containing monoclonal proteins: Serum samples were tested by the Helena TITAN GEL ImmunoFix Procedure, high-resolution agarose gel electrophoresis, immunoelectrophoresis and other appropriate procedures to identify abnormalities and to classify the M-proteins by class and type in serum, with 100% agreement.

Specimens negative for protein abnormalities: In a study, ten specimens negative for protein abnormalities were tested by immunoelectrophoresis and TITAN GEL ImmunoFix Method. All specimens gave negative results with respect to the TITAN GEL ImmunoFix Method.

**SUMMARY**

Immunofixation electrophoresis (IFE) is a two stage procedure using agarose gel high resolution protein electrophoresis in the first stage and immunofixation electrophoresis in the second stage. This specimen may be serum, urine or cerebrospinal fluid. There are numerous applications for IFE in research, forensic work, and clinical diagnosis. The greatest demand for IFE is in the clinical laboratory where it is primarily used for the detection and identification of monoclonal immunoglobulins. A monoclonal gammopathy is a primary disease state in which a single clone of plasma cells produces elevated levels of an immunoglobulin of a single class and type. Such immunoglobulins are referred to as monoclonal M-proteins, or paraproteins. In most cases they are indicative of a malignancy such as multiple myeloma or Waldenström's macroglobulinemia. Differentiation must be made between polyclonal and monoclonal gammopathies because polygammaglobulins are normal in the serum of young adults and such disorders as chronic liver diseases, collagen diseases, rheumatoid arthritis, and chronic infections. Alfonso first described immunofixation in the literature in 1964. Alfonso and Johnson published a more practical procedure in 1969 as a result of their work devoted to the detection of genetic polymorphisms of ceruloplasmin and G-glutamyl-cysteine and the conversion of C3 to active C3. They later extended their studies to genetic polymorphisms of complement components and the identification of alpha, antiprism. Immunofixation has been used as a procedure in the study of immunoglobulins since 1976.

Immunofixation offers a number of advantages over immunoelectrophoresis for the detection and identification of monoclonal immunoglobulins. It is more sensitive, requires less time and is easier to interpret. Because of one or all of these factors, many laboratories have adopted the procedure. Helena Laboratories has made revisions in the TITAN GEL ImmunoFix Procedure that streamline the staining step and reduce the time required to perform the test to 50 minutes.

Principle: Protein is first resolved by electrophoresis. In the second stage, the soluble antigen and its antibody are allowed to react. The resultant antigen-antibody complexes are spotted on the gel membrane (as long as the antibody is in slight excess or near equality) and precipitate. The precipitation density depends on the protein concentration, temperature, time and the pH of the solution. The unreacted proteins are removed by a wash step and the antigen-antibody complex (which Migration is a white line) is stained with a dye and an unbound gel (as a dark line) background is visualized. The bands in the protein separation are classified by the precipitin bands obtained with immunofixation.

**REAGENTS**

1. TITAN GEL ImmunoFix Gel

2. TITAN GEL ImmunoFix Buffer (10)

3. Acetate Buffer (1 ml)

4. Protein Fixative (10)

5. TITAN GEL Light Chain Antiserum (10)

6. TITAN GEL Heavy Chain Antiserum (10)

Other Supplies and Equipment

The following should be included as part of the TITAN GEL ImmunoFix Procedure, must be ordered individually.

TITAN GEL Light Chain Antiserum: 10 mL

TITAN GEL Heavy Chain Antiserum: 10 mL

TITAN GEL Protein Fixative: 10 mL

Helena Laboratories warrants its products to meet our published specifications and to be free from damages due to defective workmanship and materials for a period of one year from the date of shipment. This warranty shall be limited to replacement or refund of any amount not to exceed the purchase price attributable to the items of defective workmanship and materials. This warranty does not cover labor or repair services.

In no case may Helena Laboratories be liable for consequential damages even if Helena Laboratories is advised of the possibility thereof.

The foregoing warranties are in lieu of all warranties expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Helen Laboratories is committed to providing high quality, FDA approved products. This product is intended for Professional Use Only. The product is intended for research use only. Do not use in diagnostic procedures, including immunoassays.

**WARNINGS**

For IN-VITRO DIAGNOSTIC USE ONLY. DO NOT INJECT.

**Stability**

To maintain the viability of the reagents, the products must be stored frozen until use. Do not re-freeze after thawing. Store the product at -20°C.

**Storage and Stability:** The gels should be stored at room temperature (15 to 30°C) and are stable until the expiration date indicated on the package. The solution is stable for six months when stored at 15 to 30°C in a closed container. Use within one hour of opening. The following items, needed for performance of the TITAN GEL ImmunoFix Procedure, must be ordered individually.

**SODIUM AZIDE WARNING**

Sodium azide is corrosive and may cause permanent injury to skin, eyes, and respiratory passages. In addition, sodium azide is flammable and explosive. Use care in handling and storage. Do not inhale or ingest sodium azide. Do not use sodium azide or its solutions on or near the skin. Do not contaminate wounds or open cuts with sodium azide-containing solutions. Do not spill sodium azide-containing solutions on yourself or others. Do not use sodium azide-containing solutions or products near water or other sources of ignition. Do not dispose of sodium azide-containing solutions or products in drains. Do not incinerate sodium azide-containing solutions or products. Do not dispose of sodium azide-containing solutions or products in the environment. Do not use sodium azide-containing solutions or products in closed containers or spaces. Do not use sodium azide-containing solutions or products in the presence of an open flame or other source of ignition. Do not use sodium azide-containing solutions or products in the presence of a potential ignition source. Do not use sodium azide-containing solutions or products in the presence of a potential explosion hazard.
**Urine Specimen Preparation:**
- Detergent solution of Bentonite proteins (free hapba and lambda light chains): If necessary, concentrate urine sample to 100 mg/mL of total protein.

** pré isolation Fluid Preparation:**
- Concentrate CSF to an IgG level of 100-200 mg/dL for typingוכלation in CSF. Use concentrated samples for all patterns.

**Interfering Factors:**
- Evaporation of uncovered specimens may cause inaccurate results.
- Pus should not be used because the inflammatory reaction may adhere to the gel matrix resulting in a band in all patterns across the gel.

**Storage and Stability:** Fresh serum, CSF or urine is the specimen of choice. If storage is necessary, samples may be stored covered at 2 to 8°C for up to 72 hours.

**PROCEDURE**

**Materials Provided:** The following materials are contained in the TITAN GEL Immunofix Kit (Cat. No. 9346).
- TITAN GEL IFE Gels (10)
- TITAN GEL IFE Buffer (1 x 1.0 mL)
- Acid Blue Stain (1 vial)
- TITAN GEL IFE Sample Templates (10)
- TITAN GEL IFE Antisera Templates (10)
- TITAN GEL Protein Fritative (1 x 0.75 mL)
- TITAN GEL IFE Antisera to Human IgG (1 x 0.75 mL)
- TITAN GEL IFE Antisera to Human IgA (1 x 0.75 mL)
- TITAN GEL IFE Antisera to Human Lambda Light Chain (1 x 0.75 mL)
- TITAN GEL IFE Antisera to Human Kappa Light Chain (1 x 0.75 mL)
- TITAN GEL Blotter B (20)
- TITAN GEL Blotter C (10)
- TITAN GEL Blotter D (10)
- TITAN GEL Blotter X (10)

**Materials provided by Helena Laboratories but not contained in the kit above:**
- Cat No.
- Immunofix Controls (3 x 0.5 mL)
- TITAN GEL IgG (1 x 1.0 mL)
- Diaminobenzidine and Tubes (1-10 mL)
- TITAN GEL, Electrolysis Chamber (4063)
- O.D. (Incubator, Oven, Dryer)
- EVD Digital Power Supply
- TITAN GEL, Incubation Chamber (5042)
- 1000 Staining Set and Rack (5122)
- BufferSolv Bottoms with sides (set of 3)
- Titan Carrying Rack (5110)

**Materials and Supplies Needed but not Supplied:**
- Glacial Acetic Acid
- Destaining Solution: 5% acetic acid. Store at 15 to 30°C.
- Saline (0.85%)
- Laboratory Rotator

**SUMMARY OF CONDITIONS**
- Gel: TITAN GEL IFE Gel Buffer: 1000 mL
- Buffer Volume: 40 mL each side
- Serum Dilution: 1:10
- Sample Absorption Time: 5 minutes
- Application Pressure: 0.5-1 g/mL
- Electrolysis Time/Voltage: 20 minutes/120 volts
- Final Volume: 1 drop (approx. 50-75 µL)
- Antisera Volume: 1 drop (approx. 50-75 µL)
- Incubation Time: 10 minutes
- Press Conditions: Press 1 - 1 Blotter C & 1 Blotter D
- Press 2 - 1 Blotter C & 1 Blotter D
- Press Time: 5 minutes
- Wash Time: 4 minutes
- Drying Time/Dry: 1-2 minutes/58°C
- Drying Time: 3 minutes
- Drying Time: 2 x 2 minutes
- Drying Time: 2-4 minutes/58°C

**STEP-BY-METHOD**

**Part I: Protein Electrophoresis**

**A. Patient Sample Preparation**
- Dilute the patient serum samples with 0.85% Saline as follows: 1:2 (1 part serum + 1 part saline) for the serum protein pattern 1:10 (1 part serum + 9 parts saline) for identification of all immunoglobulins

**Identification**
- IgG, IgA, IgM
- Antigen excess

**B. Preparation of Electrophoresis Chamber**
- Dissolve one package of TITAN GEL IFE Buffer in 1500 mL deionized or distilled water. Mix well for complete dissolution.
- Pour 40 mL buffer into each of the inner sections of the TITAN GEL Chamber. Total buffer volume = 80 mL
- Cover the chamber until ready to use to prevent evaporation.

**Sample Application**
- Remove the TITAN GEL IFE gel from the protective packaging, peel the protective paper from the gel, and place it onto the paper overlay.
- Gently blot the surface of the gel with TITAN GEL Blotter C.
- Place the sample template on the gel so that the small hole, in the corner of the template, is positioned on the lower left, and the application slit aligns with the arrows on the gel edges. Proper placement of the template is achieved with the slightly rough side of the sides away from the gel earning towards the gel edge of the sample. Apply slight fingertip pressure to the template making sure there are not air bubbles in between it and the gel.
- Place 2 µL of the control serum sample onto the gel and ensure that the wells will hold complete samples.
- Align the Antisera Template on the gel so that the slit in the template is parallel to the antisera application areas on the gel. Make sure the template will make good contact with the gel, using gentle finger pressure along the edges and over the channel dividers.
- Add 2 µL of the control to the appropriate sample application slit. The antisera control contains IgG Kappa, IgG Lambda and lgM.
- Apply the IFE Controls.
- Open the incubation chamber and blot the wells with a Blotter A to absorb the excess undried control material not washed out of the gel matrix resulting in a band in all patterns across the gel.

**Alternate Electrophoresis Procedure**
- A selection of the serum sample is absorbed into the gel, pour 125 mL buffer into each of the outer sections of the TITAN GEL Chamber. Total volume = 250 mL. Remove the TITAN GEL Chamber Cooling Device from the refrigerator and place the gel in the center of the TITAN GEL Chamber. Wet the entire surface of the cooling device with a TITAN GEL Blotter C. Run the gel one chamber.
- Quickly place the TITAN GEL IFE gel in the electrophoresis chamber, agarose side up, in the TITAN GEL Chamber in the Titant Carrving Buffer. The agglutination point should be on the cathode (-) side. The application slit should be opened on the gel in the buffer. The application slit should be opened on the gel in the buffer.
- Place the gel in the wash dish so that they are in a horizontal position. The gel may be rotated to an orientation that the migration pattern is more easily seen.

**INTERPRETATION OF RESULTS**

The majority of monoclonal proteins migrate in the cathodic (gamma) region of the protein pattern. But, due to their abnormality, they may migrate anywhere within the globulin region on the electrophoresis pattern. The immunofixation gel is stable for an indefinite period of time.

10. Observe the control wells for the presence of precipitin rings and gels are completely dry (about 2-4 minutes).

4. Place the gel in the drying oven at 65°C for 10 minutes or until the agarose is completely dry.

5. Place the gel(s) from the saline wash. Place 1 Blotter C, wetted in saline, on the surface of the gel and dissolve the blots. Dry the gel in a drying oven at 65°C for 1/4 minutes or until the agarose is completely dry.

6. Place the gel(s) in 1000 Staining Solution for 1 minute or until the background is clear. (See Materials and Supplies Needed but not Supplied for destain formulation.)

7. The stain the gel in Acid Blue Stain, again a single gel can be stained.

8. Pour 40 mL buffer into each of the inner sections of the TITAN GEL Chamber.

9. Open the incubation chamber and blot the wells with a Blotter A to absorb the excess undried control material not washed out of the gel matrix resulting in a band in all patterns across the gel.

10. Observe the control wells for the presence of precipitin rings and gels are completely dry (about 2-4 minutes).

14. Apply TITAN GEL Antisera and Protein Fixative.

The antigen excess will occur if there is not a slight antibody excess or antigen antibody equivalence at the site of precipitation. Antigen excess in IFE is usually due to a very high level of the immuno...
**PART I: PROTEIN ELECTROPHORESIS**

**A. Patient Sample Preparation**

1. Dilute the patient serum samples with 0.85% saline as follows: 1:2 (1 part serum + 1 part saline) for the serum protein pattern or 1:10 (1 part serum + 9 parts saline) for identification of all immunoglobulins.

<table>
<thead>
<tr>
<th>Identification</th>
<th>Dilution for Serum</th>
</tr>
</thead>
<tbody>
<tr>
<td>IgG, IgA, IgM</td>
<td>1:10</td>
</tr>
</tbody>
</table>

2. If necessary, concentrate urine and spinal fluids according to instructions provided in SPECIMEN COLLECTION AND HANDLING.

**B. Preparation of Electrophoresis Chamber**

1. Place the sample template on the gel so that the small hole, in the corner of the template, is positioned at the lower left, and the application slits align with the appropriate antigens.

2. After allowing the samples to diffuse into the agarose for 2.5 minutes, gently blot the template with TITAN GEL Blotter A to remove unabsorbed sample. Then carefully remove the template.

**C. Sample Application**

1. Apply TITAN GEL Antisera and Protein Fixative into the agarose over the template slits. When using a concentrated sample, apply the concentrate to the appropriate wells.

2. While the sample is absorbing into the gel, pour 125 mL buffer into each of the outer sections of the TITAN GEL Chamber. Total buffer volume = 400 mL.

3. Wait five (5) minutes after the last sample has been applied to allow the gel to fully set. Then carefully blot the sample into the gel.

4. Apply TITAN GEL Antisera and Protein Fixative into the agarose over the template slits. When using a concentrated sample, apply the concentrate to the appropriate wells.

5. After allowing the samples to absorb into the agarose, gently blot the template with TITAN GEL Blotter A to remove unabsorbed sample. Then carefully remove the template.

**D. Electrophoresis of the Sample Gel**

1. Place the gel in the TITAN GEL isoelectric Chromoblotter Chamber. The IFE gel is placed with the long dimension parallel to the cooling device in the center of the TITAN GEL Chamber.

2. Quickly place the TITAN GEL IFE gel in the electrophoresis chamber (agarose side down) on the TITAN GEL Chromoblotter in the Titran Carrying Rack.

3. The point of application should be on the cathode (-) side. Two gels may be placed in each blotting chamber. The gels can run on a TITAN GEL Power Supply.

4. The sample template will be placed on the surface of the gel. Electrophoresis the gel at 120 volts for 20 minutes.

**Alternate Electrophoresis Procedure**

1. Place the gel in the TITAN GEL Chamber Cooling Device. Place the reference gel on the TITAN GEL Chamber. Wet the entire surface of the cooling device with a damp cloth.

2. Quickly place the TITAN GEL IFE gel in the electrophoresis chamber (agarose side down) on the TITAN GEL Chromoblotter in the Titran Carrying Rack.

3. The point of application should be on the cathode (-) side. Two gels may be placed in each blotting chamber. The gels can run on a TITAN GEL Power Supply.

4. The sample template will be placed on the surface of the gel. Electrophoresis the gel at 120 volts for 20 minutes.

**PART II: IMMUNOFIXATION**

1. Rinsing and pressing the gel.

2. Place the gel in the TITAN GEL isoelectric Chromoblotter Chamber which has been lined with a damp blotter or filter paper or return the gel to the protective plastic bag. Be sure the gel is laying flat against the wet blotter. Should the gel maintain a bowed shape or curl, the antibody absorbed in the gel is not sufficient to hold it flat.

3. Apply the IFE Controls.

4. The completed, stained and dried gel is then ready for interpretation in the antiserum application and interpretation section of the manual.

5. Open the incubation chamber and blot the wells with a Blotter A to ensure that the wells will hold all control and sample material.

6. Apply TITAN GEL Antisera and Protein Fixative.

7. Place the sample template on the gel so that the small hole, in the corner of the template, is positioned at the lower left, and the application slits align with the appropriate antigens.

8. After allowing the samples to absorb into the gel, gently blot the template with TITAN GEL Blotter A to remove unabsorbed sample. Then carefully remove the template.

9. While the sample is absorbing into the gel, pour 125 mL buffer into each of the outer sections of the TITAN GEL Chamber. Total buffer volume = 400 mL.

10. Wait five (5) minutes after the last sample has been applied to allow the gel to fully set. Then carefully blot the sample into the gel.

11. Apply TITAN GEL Antisera and Protein Fixative into the agarose over the template slits. When using a concentrated sample, apply the concentrate to the appropriate wells.

12. Electrophoresis the gel at 120 volts for 20 minutes.

**INTERPRETATION OF RESULTS**

The majority of monoclonal proteins migrate in the cathodal (gamma) region of the protein pattern. If their abnormality, they may migrate anywhere within the globulin region on protein electrophoresis. As a result, the protein precipitation patterns obtained by immunofixation will occupy the same migration position and shape as the monoclonal band on the reference protein electrophoresis pattern. The abnormal protein is identified by the corresponding antisera used.

Figure 1 illustrates the results obtained with immunofixation. When low concentration of protein is used for the assay to detect the monoclonal band may appear on the stained background of the polyclonal immunoglobulin. A stain band may not always appear when the monoclonal band is present along with a large polyclonal increase. For an in depth discussion of IFE interpretation, consult TITAN GEL’s Immunofixation for the Identification of Monoclonal Gammopathies Form R5.

**LIMITATIONS**

Antigen excess will occur if there is not a slight antibody excess or antigen antibody equivalence at the site of precipitation. Antigen excess in IFE is usually due to a very high level of the immuno...
TITAN GEL ImmunoFix System Cat. No. 3046

TITAN GEL IgM (10) TITAN GEL IgA (10)
Acid Blue Stain (1 vial) TITAN GEL IFE Antiserum to Human Lambda (1 x 0.75 mL)
TITAN GEL IFE Antiserum to Human Kappa (1 x 0.75 mL)
TITAN GEL IFE Antiserum to Human IgG (1 x 0.75 mL)
TITAN GEL IFE Antiserum to Human IgA (1 x 0.75 mL)
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TITAN GEL Antiserum to Human IgA (1 x 0.75 mL)
TITAN GEL Antiserum to Human IgG (1 x 0.75 mL)
TITAN GEL Antiserum to Human IgM (1 x 0.75 mL)
TITAN GEL Protein Fixative (1 x 0.75 mL)

Other Supplies and Equipment
- The following supplies are compatible with the TITAN GEL ImmunoFix Procedure: Staining Set and Rack 5122
- TITAN GEL Chamber/Adaptor 1559
- Difco Nutrient Broth (2 x 50 mL)
- Difco Nutrient Agar Base (2 x 250 g)
- Difco Luria Agar Base (2 x 250 g)
- Difco Nutrient Agar (2 x 500 g)
- Difco Phenol Red Agar (2 x 250 g)
- Difco Phenol Red Broth (2 x 50 mL)
- Tryptone 10X (1 x 20 g)
- Peptide broth (1 x 500 g)

For Sales, Technical and Order Information and Service Assistance, call 800-231-5683 toll free.

Helena Laboratories warrants its products to meet our published specifications and to be free from defects in materials and workmanship. However, it shall be limited to replacement or refund of any amount not to exceed the purchase price actually paid by the customer. This warranty is made without any further liability or additional warranties. In no case shall Helena Laboratories be liable for consequential damage except when they are caused by the negligence of Helena Laboratories.

The following warranties are in lieu of all warranties expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

SAFETY

1. Dilute all serum samples with 0.85% saline. Sample dilutions should be prepared on fresh day of use.
2. DIFCO 10X broth should be prepared in 2-liter bottles in a class B or C biological safety cabinet.

SPEMEN COLLECTION AND HANDLING

Specimen: The specimen may be serum, cerebrospinal fluid or urine.

Separation:
- 1. Dilute all serum samples with 0.85% saline. Sample dilutions should be prepared on fresh day of use.
- 2. DILUTE: serum 1:10 for the IFE reference pattern.
- 3. When typing monoclonal specimens, if the sample IgG level is less than 10 mg/dL, the sample should be diluted 1:10 for the IgG slot.
- 4. When typing on Lambda proteins in specimens containing mixed monoclonal bands, a sample dilution of 1:5 is recommended for the light and Lambda patterns.

WARNING: FOR IN-VITRO DIAGNOSTIC USE ONLY. DO NOT INGEST.

Preparation for Use: For Dissolve the dry stain in 1000 mL 5% acetic acid.

Storage and Stability: The dry stain should be stored at ≥35 °C until the expiration date indicated on the vial. The expiration date is valid for 12 months from the date of manufacture. 

WARNING: CORROSIVE - FOR IN-VITRO DIAGNOSTIC USE ONLY. NEVER PIPETTE BY MOUTH. DO NOT INGEST. CAUTION: Do not expose to water. 

Summary:

The TITAN GEL ImmunoFix is the identification of monoclonal gammopathies in serum, urine or cerebrospinal fluid using high resolution protein electrophoresis and immunofixation.

SUMMARY:

Immuno fixation electrophoresis (IFE) is a two stage procedure using agarose gel high resolution protein electrophoresis in the first stage and immunofixation in the second. This specimen can be serum, urine or cerebrospinal fluid. There are numerous applications for IFE in research, forensic and clinical medicine. The greatest demand for IFE is in the clinical laboratory where it is primarily used for the detection and identification of monoclonal gammopathies (MGPS). A monoclonal gammopathy is a primary disease state in which a single clone of plasma cells produces elevated levels of an immunoglobulin of a single class and type. Such immunoglobulins are referred to as monoclonal proteins, M-proteins, or paraproteins. In most cases they are indicative of a malignant such as multiple myeloma or Waldenstrom’s macroglobulinaemia. Differentiation must be made between polyclonal and pathological gammopathies because polygammaglobulinaemia is a benign disorder and not uncommon. Two conditions of chronic liver diseases, collagen and rheumatoid arthritis, and chronic infections. Autoimmunounfixation in the literature in 1964, Alper and Johnson published a more practical method in 1969 as a result of their work devoted to the detection of genetic polymorphisms of ceruloplasmin and Gc-globulin and the conversion of C3 during activation. 1 Alper and Johnson published a more practical method in 1969 as a result of their work devoted to the detection of genetic polymorphisms of ceruloplasmin and Gc-globulin and the conversion of C3 during activation.

PERFORMANCE CHARACTERISTICS

Specimens containing immunoglobulin proteins: Serum samples were tested by the Helena TITAN GEL ImmunoFix Procedure, high resolution protein electrophoresis, immunoelectrophoresis, and other appropriate procedures to identify abnormalities and to classify the proteins by class and type in serum, with 100% agreement. (See Table 1).

Specimens negative for protein abnormalities: In a study, ten patients, determined free of protein abnormalities, were tested by immunofixation. All normal specimens gave negative results on the TITAN GEL ImmunoFix Method.

BIBLIOGRAPHY

3. ACRP band may be detected in patients with acute inflammatory disease. 

4. TITAN GEL IgE Protein Fixative

TITAN GEL Antiserum to Human IgE (1 x 0.75 mL)
TITAN GEL Protein Fixative (1 x 0.75 mL)

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