

## Spectrum™ Plus Chromogenic Bi-plate Culture System

### Product Information and Instructions

**Application:** Spectrum™ agar is a chromogenic culture medium that can be used in conjunction with traditional methods to aid in presumptive identification of a number of common bacterial organisms known to cause disease in animals. Spectrum™ Plus consists of a two-chambered agar plate containing Spectrum™ agar and non-selective Tryptic Soy Agar with 5% sheep blood. Spectrum™ Plus is intended for veterinary use only.

**Product Features:** Spectrum™ chromogenic agar has been formulated to produce uniquely pigmented colonies when inoculated with those organisms for which the product has been validated. Each organism can then be visually differentiated on the basis of color and colony morphology. Depending upon the organism, color reactions may be either genus or species-specific. Tryptic Soy agar with 5% Sheep blood, commonly referred to as “blood agar” or “TSA”, is a non-selective medium that will support the growth of a wide range of bacteria. When grown on blood agar, certain organisms will elaborate hemolysins that in turn will lyse the intact red blood cells within the medium. While this hemolytic reaction can aid in the identification of some organisms, it is rarely diagnostic per se of any one species.

**Storage and Shelf Life:** Each Spectrum™ Plus agar plate comes individually wrapped for extended shelf life. Plates should be stored inverted at 2°-8° C (36°-46° F) and protected from light. Do not freeze.

**Procedure:** Spectrum™ Plus plates should be removed from the refrigerator and allowed to warm to room temperature prior to inoculation. The surface of the agar should be inspected for moisture that could affect the growth of the inoculum. If present, decant excess moisture or allow to evaporate prior to use. Inoculate each plate using established aseptic technique. Colony separation will be improved by using the included inoculation loops. Place plates in a 37° C incubator inverted (media on top.). At 18-24 hours, inspect the plate for bacterial growth and note the color and morphology of the resulting colonies. For best results, plates should be read within 24 hours as prolonged incubation can alter some of the characteristic color reaction(s).

**Interpretation:** Refer to the following brief descriptions and provided color chart and table. These images and descriptions were obtained using pure cultures of the most commonly isolated species of each organism. Some less common subspecies may produce differing color reactions. Mixed cultures should be carefully interpreted. See Ancillary Testing section for methods that may further aid in identification. Presumptive and/or questionable results should be verified using traditional culture methods and/or sent to a qualified reference laboratory.

Streptococcus spp. (All)	Light blue pinpoint colonies.
Enterococcus spp.	Small blue to turquoise colonies.
Staphylococcus aureus	White to pale yellow colonies. Some species mauve.
E. coli	Pink to deep pink colonies. Characteristic odor.
Proteus mirabilis	Beige to slightly orange swarming colonies. Brown diffusing pigment.
Pseudomonas aeruginosa	White to green serrated colonies surrounded by green diffusing pigment.
Klebsiella Spp.	Large metallic blue mucoid colonies. Occasional pink halo.
Enterobacter Spp.	Large metallic blue colonies. Occasional pink halo.
Candida albicans (Yeast)	Slow-growing medium off-white rough colonies with small folds.

**Antibiotic Sensitivity:** Organisms may be harvested directly from the Spectrum™ chromogenic section of the plate for sensitivity testing via the Kirby-Bauer method. Do not perform sensitivity testing on organisms harvested from blood agar.

**Ancillary Testing:**

1. The Catalase test using 3% hydrogen peroxide can aid in differentiating Staphylococcus from Streptococcus species.
2. The Oxidase test can aid in differentiating Pseudomonas aeruginosa from other Gram negative enteric organisms. The test can be performed using Oxidase reagent droppers Product no. RGTBD4361181-10.
3. Candida albicans and other yeasts may at times be difficult to differentiate from bacteria. Gross morphology, rate of growth, and the presence of large blue to purple budding cells on Gram stain can aid interpretation.

**Limitations of the Procedure:** The following factors may affect organism growth and colony color:

- Improper specimen collection, storage, and inoculation.
- Initiation of antimicrobial therapy prior to inoculation.
- Improper incubation temperature and duration.
- Improper handling and storage of media prior to inoculation.

**Packaging:** Spectrum™ Plus is packaged as 10 individually wrapped plates with inoculation loops.  
Reorder Product No. MCR-PLTSP200

**References:**

Merlino J., S Siarakas, GJ Robertson, GR Funnell, T Gottlieb, and R Bradbury: "Evaluation of Chromagar Orientation for Differentiation and Presumptive Identification of Gram-negative Bacilli and Enterococcus species". J. Clin. Microbiol. 1996 34: 1788-1793

Beehan, D. and A. McKinnon: "How to Diagnose Common Equine Reproductive Tract Bacterial Pathogens Using Chromogenic Agar". Proceedings of the American Association of Equine Practitioners Annual Meeting, December 2009. pp. 320-325

Ferris, Ryan B. Palmer, B. Borlee, and P. McCue: "Ability of Chromogenic Agar, MALDI-TOF, API® 20E and 20 Strep Strips, and BBL Crystal™ Enteric and Gram-positive Identification Kits to Precisely Identify Common Equine Uterine Pathogens". Journal of Equine Veterinary Science. Vol 57. October 2017. pp 35-40.

The Spectrum™ Plus Chromogenic Culture System is manufactured and distributed exclusively by:

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