



# Instructions for Use

## HardyCHROM™ GROUP A STREP AGAR

|                |  |               |
|----------------|--|---------------|
| Cat. no. G337  | HardyCHROM™ Group A Strep Agar, 15x100mm Plate, 18ml                         | 10 plates/bag |
| Cat. no. GA337 | HardyCHROM™ Group A Strep Agar, 15x100mm Plate, 18ml (reduced stacking ring) | 10 plates/bag |

### INTENDED USE

Hardy Diagnostics HardyCHROM™ Group A Strep Agar is a chromogenic medium recommended for the selective cultivation and differential isolation of Group A *Streptococcus* (*S. pyogenes*) from specimens based on colony color.

### SUMMARY

Group A streptococci (GAS) are virulent pathogens that may cause infections such as strep throat (pharyngitis), scarlet fever, or impetigo. Timely detection, reporting, and antibiotic treatment decrease the risk of nonsuppurative sequelae. In addition, throat cultures are necessary to confirm bacterial pharyngitis by group A beta-hemolytic streptococci prior to antibiotic therapy. However, there may be problems detecting these strains as overgrowth of normal upper respiratory tract flora can obscure the presence of GAS and cause false-negative results. Additionally, delays in reporting can be compounded by attempting to re-isolate the organism.

Formulations using selective agents have been known to inhibit the growth of certain fastidious strains and cause a slow recovery rate of GAS from patient cultures. Utilizing a nutritive basal medium may limit the inhibitory effects of selective agents. Chromogens added to the nutritive base also help differentiate the target organism and provide early presumptive identification and differentiation of GAS isolates.

HardyCHROM™ Group A Strep Agar contains organic nitrogen, particularly amino acids and long-chain polypeptides, from peptones and yeast extract. These, along with additional growth factors, render the medium highly nutritious and help to counteract selective agents added to inhibit unwanted flora. Carbohydrates are added to provide a source of energy and osmotic equilibrium is maintained by the addition of salts. Lastly, a unique chromogenic mixture aids by creating a color reaction in target strains to differentiate GAS isolates from other species that may be present in the sample.

### FORMULA

Ingredients per liter of deionized water:\*

|                |       |
|----------------|-------|
| Peptones       | 18.0g |
| Salts          | 8.0g  |
| Yeast Extract  | 4.0g  |
| Growth Factors | 3.0g  |
|                |       |

|                     |       |
|---------------------|-------|
| Carbohydrate        | 3.0g  |
| Selective Agents    | 2.2g  |
| Chromogenic Mixture | 1.7g  |
| Agar                | 13.0g |

Final pH 7.3 +/- 0.2 at 25°C.

\* Adjusted and/or supplemented as required to meet performance criteria.

## STORAGE AND SHELF LIFE

Storage: Upon receipt, store at 2-8°C away from direct light. Media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), contamination, or if the expiration date has passed. Product is light and temperature sensitive; protect from light, excessive heat, moisture, and freezing.

The expiration dating on the product label applies to the product in its intact packaging when stored as directed. The product may be used and tested up to the expiration date on the product label and incubated for the recommended quality control incubation times.

Refer to the document "[Storage](#)" for more information.

## PRECAUTIONS

This product may contain components of animal origin. Certified knowledge of the origin and/or sanitary state of the animals does not guarantee the absence of transmissible pathogenic agents. Therefore, it is recommended that these products be treated as potentially infectious, and handle observing the usual universal blood precautions. Do not ingest, inhale, or allow to come into contact with skin.

This product is for *in vitro* diagnostic use only. It is to be used only by adequately trained and qualified laboratory personnel. Observe approved biohazard precautions and aseptic techniques. All laboratory specimens should be considered infectious and handled according to "standard precautions." Refer to the document "[Guidelines for Isolation Precautions](#)" from the Centers for Disease Control and Prevention.

For additional information regarding specific precautions for the prevention of the transmission of all infectious agents from laboratory instruments and materials, and for recommendations for the management of exposure to infectious disease, refer to CLSI document M-29: *Protection of Laboratory Workers from Occupationally Acquired Infections: Approved Guideline*.

Sterilize all biohazard waste before disposal.

Refer to the document "[Precautions When Using Media](#)" for more information.

## PROCEDURE

**Specimen Collection:** Infectious material should be submitted directly to the laboratory without delay and protected from excessive heat and cold. If a delay in processing is unavoidable, specimens should be inoculated into an appropriate transport media and refrigerated until inoculation.

**Method of Use:** Prior to inoculation, the medium should be brought to room temperature and the surface of the agar should be dry.

1. Inoculate the surface of the medium with the specimen and streak for isolation using the four quadrant technique. For testing a pure isolate, touch the top of a colony with a sterile wire loop and streak for isolation.

2. Incubate plates in an enhanced 5-10% CO<sub>2</sub> environment at 35°C for 24 hours. A CO<sub>2</sub> environment can be achieved using a CO<sub>2</sub> incubator or by using a sealed jar such as [Cat. no. 16000](#) in conjunction with a CO<sub>2</sub> generating sachet, [Cat. no. CD025A](#). For incubating only a small number of plates (one to four 15x100mm plates), a pouch, sealing bar, and gas generating system can also be used, such as [Cat. no. AG020C](#), [Cat. no. AN005C](#), and [Cat. no. CD020C](#) to create an enriched CO<sub>2</sub> environment.

3. After incubation, examine plates for growth, typical colony morphology, and a red, red-brown, or red-orange colony pigment.

## INTERPRETATION OF RESULTS

Typical colonies of group A streptococci (GAS) appear as small convex and red, red-brown, or red-orange colonies after 24 hours incubation. Non-GAS isolates should appear as blue, clear, or white colonies. Confirm colonies using latex agglutination ([Cat. no. PL030HD](#)) or other confirmatory method.

## LIMITATIONS

Unless a provision is made to reduce oxygen tension, approximately 2% of group A streptococci may be missed if incubated aerobically. Aerobic incubation may also interfere with proper colony color development. Incubation in increased CO<sub>2</sub> is recommended.

If further biochemical or confirmatory testing involves a colorimetric reaction, it is recommended users validate the test method if using a colony direct from HardyCHROM™ Group A Strep Agar, or subculture an isolated colony to a non-selective plate to ensure chromogens from the medium do not interfere with the results of the test.

## MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as loops, swabs, applicator sticks, other culture media, incinerators, incubators, 2.5L gas jar ([Cat. no. 16000](#)), 2.5L CO<sub>2</sub> sachet ([Cat. no. CD025A](#)), CO<sub>2</sub> pouch ([Cat. no. AG020C](#)), pouch sealing bars ([Cat. no. AN005C](#)), or pouch CO<sub>2</sub> sachet ([Cat. no. CD020C](#)), etc., as well as serological and biochemical reagents ([Cat. no. PL030HD](#)), are not provided.

## QUALITY CONTROL

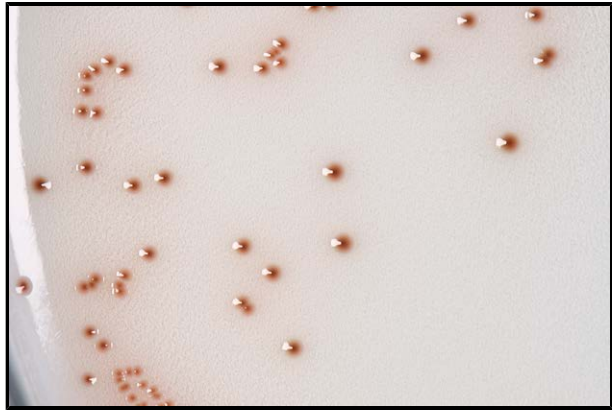
| Test Organisms                                 | Inoculation Method* | Incubation |             |                    | Results  |
|--|---------------------|------------|-------------|--------------------|--|
|  |                     | Time       | Temperature | Atmosphere         |  |
| <i>Streptococcus pyogenes</i><br>ATCC® 19615   | A                   | 24hr       | 35°C        | CO <sub>2</sub> ** | Growth; red-brown colonies   |
| <i>Streptococcus pyogenes</i><br>ATCC® 12384   | A                   | 24hr       | 35°C        | CO <sub>2</sub> ** | Growth; red to red-orange colonies   |
| <i>Streptococcus salivarius</i><br>ATCC® 13419 | B                   | 24hr       | 35°C        | CO <sub>2</sub> ** | Variable growth; blue colonies   |
| <i>Streptococcus oralis</i><br>ATCC® 6249      | B                   | 24hr       | 35°C        | CO <sub>2</sub> ** | Partial to complete inhibition; if growth, colonies should appear white or blue in color |
| <i>Escherichia coli</i><br>ATCC® 25922         | B                   | 24hr       | 35°C        | CO <sub>2</sub> ** | Inhibited  |
| <i>Candida albicans</i><br>ATCC® 10231         | B                   | 24hr       | 35°C        | CO <sub>2</sub> ** | Inhibited  |

\*\* Atmosphere of incubation is enriched with 5-10% CO<sub>2</sub>.

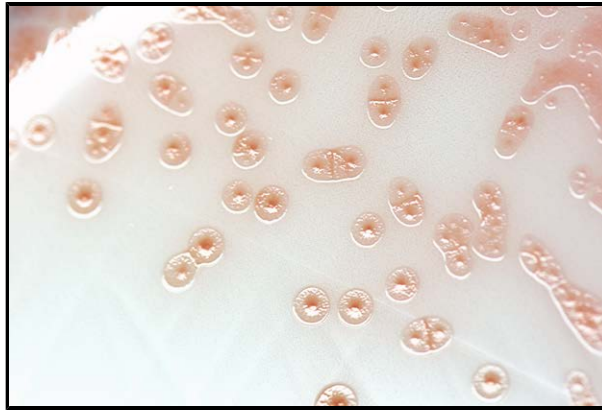
## USER QUALITY CONTROL

## PHYSICAL APPEARANCE

HardyCHROM™ Group A Strep Agar should appear opaque and white to off-white in color.



*Streptococcus pyogenes* (ATCC® 19615) red-brown colonies growing on HardyCHROM™ Group A Strep Agar (Cat. no. G337). Incubated in CO<sub>2</sub> for 24 hours at 35°C.



*Streptococcus pyogenes* (clinical strain) red-orange colonies growing on HardyCHROM™ Group A Strep Agar (Cat. no. G337). Incubated in CO<sub>2</sub> for 24 hours at 35°C.

## REFERENCES

1. Anderson, N.L., et al. *Cumitech 3B; Quality Systems in the Clinical Microbiology Laboratory*, Coordinating ed., A.S. Weissfeld. American Society for Microbiology, Washington, D.C.
2. *Quality Assurance for Commercially Prepared Microbiological Culture Media*, M22. Clinical and Laboratory Standards Institute (CLSI - formerly NCCLS), Wayne, PA.
3. Tille, P.M., et al. *Bailey and Scott's Diagnostic Microbiology*, C.V. Mosby Company, St. Louis, MO.
4. Jorgensen et al. *Manual of Clinical Microbiology*. American Society for Microbiology, Washington, D.C.
5. Centers for Medicare & Medicaid Services (CMS). [Individualized Quality Control Plan \(IQCP\)](#).

ATCC is a registered trademark of the American Type Culture Collection.

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[Ordering Information](#)

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