Hardy CHROM™

CATALOG

Chromogenic Media

HARDY DIAGNOSTICS
A Culture of Service™
HardyCHROM™ is Hardy Diagnostics’ line of chromogenic, selective and differential culture media, recommended for use in cultivation, isolation, and identification of microorganisms.

Hardy Diagnostics was the first company to introduce chromogenic media to the United States in 1996.
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HardyCHROM™ CRE is a selective and differential chromogenic agar medium intended for the qualitative and presumptive detection from stool specimens of *Escherichia coli* that are non-susceptible to carbapenems as pink colonies and KES (Klebsiella aerogenes, Klebsiella oxytoca, Klebsiella pneumoniae, Enterobacter cloacae complex, and Serratia marcescens) that are non-susceptible to carbapenems as blue colonies.

HardyCHROM™ CRE is intended as an aid in the detection, identification of colonization and control of these bacteria in a healthcare setting. HardyCHROM™ CRE is not intended to diagnose infection or guide therapy. Results can be interpreted after incubation for 18-24 hours. Subculture to non-selective medium is required for confirming identification, antimicrobial susceptibility testing and epidemiological typing.

15x100mm, 10/pk, Cat. no.................................G323
Non-susceptible *E. coli* produces colonies that are pink to magenta in color with darker pink centers.

Colonies that are not pink to magenta, blue, or blue with pink halos are negative. No carbapenem non-susceptible *Escherchia coli* or KES detected.
HardyCHROM™ ESBL is a selective and differential chromogenic medium which is intended for the qualitative and presumptive detection from stool specimens of:

- *Enterobacteriaceae* that are potentially non-susceptible to ceftazidime and cefpodoxime.

- Extended-spectrum beta-lactamase (ESBL)-producing *Escherichia coli, Klebsiella pneumoniae* and *Klebsiella oxytoca*.

Growth can appear as early as 18 hours after inoculation. *Escherichia coli* will produce pink colonies, *Proteus mirabilis* will produce yellow or gold colonies and *Klebsiella pneumoniae* produce blue colonies.

15x100mm plate, 10/pk........................................G321
“HardyCHROM™” ESBL is not intended to diagnose ESBL infection nor to guide or monitor therapy for ESBL infections. Further testing using approved methods is necessary for identification, susceptibility testing, or epidemiological typing.

ESBL or Extended Spectrum Beta Lactamases refer to a group of enzymes produced by some species of bacteria that can mediate the organism’s resistance to one or more broad spectrum penicillins and cephalosporin antibiotics.

This breakthrough culture media will help screen for ESBL quickly and more efficiently from stool specimen.
**HardyCHROM™ MRSA**

**HardyCHROM™ MRSA** is a selective and differential culture medium that facilitates the isolation and identification of methicillin resistant *Staphylococcus aureus* (MRSA) to aid in the prevention and control of MRSA infections in healthcare settings. The test is performed on anterior nares swabs from patients and healthcare workers to screen for MRSA colonization.

- Distinct color change read-out
- Bright color development
- Compatible with automation
- Read-out at 24 hours

15x100mm plate, 10/pk...............................G307

15x100mm plate, 100/bx............................G307BX

Reduced stacking ring
15x100mm plate, 10/pk...............................GA307
"HardyCHROM™” MRSA is not intended to diagnose MRSA infection nor to guide or monitor therapy for MRSA infections. Further testing using approved methods is necessary for susceptibility testing or epidemiological typing. Methicillin-resistant Staphylococcus aureus colonies grown aerobically within 24 hours.

This chromogenic medium simplifies the identification of MRSA infections. MRSA strains grown in the presence of chromogenic substrates produce deep pink to magenta colonies. Color development is bright, distinct and easy-to-read.

**Contact Plate (for environmental screening), 15x60mm, 10/pk..........................P14**

**HardyCHROM MRSA/HardyCHROM Staph. aureus Biplate, 15x100mm, 10/pk.........................J35**
HardyCHROM™ SS NoPRO™ (no-Proteus) Agar is recommended for the selective isolation and differentiation of *Salmonella* and *Shigella* spp. from stool. HardyCHROM™ SS NoPRO Agar is intended as a primary screening tool to distinguish *Salmonella* and *Shigella* spp. from non-pathogenic enteric bacteria based on colony color, while inhibiting the growth and characteristic swarming of *Proteus* spp.

The enhanced inhibition of *Proteus* reduces the expense involved in working up non-pathogens that could mimic enteric pathogens. Further species confirmation of suspect colonies via conventional or automated methods is recommended.

This chromogenic medium for *Salmonella* and *Shigella* is both sensitive and specific without needless work-ups for *Proteus*.

15x100mm plate, 10/pk.................................................G327


Plate incubated aerobically for 24 hours at 35 °C.
Prospective Evaluation of HardyCHROM™ SS NoPRO Agar for Salmonella and Shigella Isolation from Routine Stool Culture

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Abstract:
Background: Traditional stool culture media (e.g. Hektoen enteric agar) have high rates of isolation of non-pathogenic microbiota that can mimic the colony morphologies of Salmonella and Shigella species. Consequently, traditional stool cultures are associated with significant culture work-up and thus higher demands on technologists’ time. HardyCHROM™ SS NoPRO is inhibitory to Proteus species and would to reduce the number of unnecessary work-ups from stool cultures.

Methods: From June-August 2017, all stools received for clinical stool culture testing were inoculated in parallel on HardyCHROM™ SS NoPRO agar. Results of standard of care and HardyCHROM™ SS NoPRO agar testing were directly compared. The number of cultures negative for Salmonella and Shigella but requiring further work-up was assessed and a cost analysis was performed.

Results: A total of 175 stool cultures were performed during the study period. Nine specimens were positive for Salmonella and Shigella species by standard of care culture (5.1% positivity rate): Shigella flexneri = 6, Shigella sonnei = 1 and Salmonella species = 2.76 specimens required additional work-up with the standard of care culture, compared with 28 specimens for HardyCHROM™ SS NoPRO (specificity of 54% and 83%, respectively). In total, 90 colonies from SS agar required further work up (cost = $848) compared with 30 colonies from HardyCHROM™ SS NoPRO (cost = $157) during the study period.

Conclusions: Compared with SS Agar, HardyCHROM™ SS NoPRO would have reduced the number of cultures requiring work-up by 50% and reduced the overall costs associated with stool culture by 80% when colonies were directly identified by MALDI-TOF.

Acknowledgments/ References: HardyCHROM™ SS NoPRO agar for this study was kindly provided by Hardy Diagnostics. We thank the LAC+USC Clinical Microbiology laboratory staff for technical assistance.

S. sonnei
Salmonella
HardyCHROM™ Candida is a selective medium recommended for the isolation and identification of yeasts. This medium also allows for the differentiation of *C. albicans*, *C. tropicalis* and *C. krusei* based on differences in colony morphology and color. This medium facilitates the detection of mixed yeast cultures.

- Helpful in spotting mixed infections.
- Color development occurs within 24 to 48 hours.
- Colors are bright and easy to read out.

HardyCHROM™ Candida relies on chromogenic substances to reveal specific enzymes for species identification by color. Due to the unique colors produced, no further testing is needed to identify *C. albicans*, *C. tropicalis*, and *C. krusei*. A trehalose test is needed to confirm *C. glabrata*.

15x100mm plate, 10/pk........................................G301
• *C. albicans* produces smooth, medium green to dark metallic green colonies.

• *C. tropicalis* colonies appear medium blue to dark metallic blue with a blue halo.

• *C. glabrata* produces smooth, pink colonies, often with a darker mauve center. Further testing, such as Rapid Trehalose Fermentation Broth (cat. no. Z205) is needed for confirmation.

• *C. krusei* produces rough, spreading, pink colonies.
HardyCHROM™ UTI is a chromogenic culture medium that facilitates the isolation and differentiation of urinary tract pathogens. The development of various colors, due to chromogenic substances in the medium, allows for the differentiation of multiple microorganisms from the primary set-up of a urine specimen.

There are a number of organisms routinely isolated from urinary tract infections (UTI). Most UTIs are caused by *Escherichia coli* alone, or in combination with other organisms. The most frequently isolated species produce characteristic enzymes. Thus, HardyCHROM™ UTI can be used for the cultivation and differentiation of various groups of organisms with only a minimum number of confirmatory tests.

15x100mm plate, 10/pk.........................................G313

Blood Agar/UTI, biplate, 10/pk.............................J119
- *E. coli* produces large magenta colonies (confirmatory, no further testing required)

- *Enterococcus faecalis/faecium* produces small, turquoise-colored colonies

- *Pseudomonas* spp. produce light yellow/green, translucent colonies.

- *Klebsiella, Enterobacter, and Serratia* spp. produce large, deep blue colonies

- *Staphylococcus saprophyticus* produces opaque, pink colonies

- *Candida* spp. produces small, white, colonies

- *Proteus, Morganella, and Providencia* spp. produce clear to light yellow colonies with a diffuse golden-orange halo in the medium

- *Staphylococcus aureus* produces opaque, white-colored colonies

- *Citrobacter* spp. produce dark blue colonies, often with a rose halo in the surrounding media.
HardyCHROM™ HUrBi™ Biplate is a selective chromogenic medium recommended for the cultivation, differentiation and enumeration of various gram-negative and gram-positive bacteria, and yeast based on colony color and morphology. This biplate reduces the need for expensive automated ID cards.

Selective agents have been added to the each side of the biplate to select for growth of gram-positive organisms and yeast on one side and to select for growth of gram-negative organisms on the other side of the biplate. Distinct color reactions for each of the common urinary tract pathogens make it easier to detect mixed infections.

100mm Biplate, 10 /pk.........................................J100
Enterococcus spp.
Klebsiella pneumoniae.

Pseudomonas aeruginosa

Escherichia coli
Staphylococcus aureus
HardyCHROM™ Staph aureus allows for the rapid and reliable detection of *Staphylococcus aureus*. This medium contains a special chromogenic mix that allows for the isolation and differentiation of *Staphylococcus* spp.

*Staphylococcus aureus* has also been implicated in nosocomial infections and food poisoning outbreaks. Many *Staphylococcus aureus* strains produce enterotoxins that cause food poisoning when ingested. Food poisoning, bacteremia, pneumonia, toxic shock syndrome, and meningitis are some of the more serious infections that can be caused by *Staphylococcus aureus*.

15x100mm plate, 10/pk......................................G311
Staphylococcus aureus

Staphylococcus aureus can be identified as smooth, pink-colored colonies on the plate.

Other organisms may appear as colorless, blue, turquoise, or cream colonies, or will be inhibited. Staphylococcus epidermidis will be partially to completely inhibited.
BluEcoli™ Urine Biplate is a urine culture media, consisting of Blood Agar on one side and BluEcoli™ Agar on the other side, which is used for the isolation of urinary pathogens and for the identification of *E. coli*.

A revolutionary agar plate for economically screening urine specimens for *E. coli*. Since 80-90% of all positive urine cultures are *E. coli*, the BluEcoli™ Urine Biplate is a fast, easy, and cost effective way of identifying the majority of your urine culture workload.¹

BluEcoli™/Blood Agar,  
15x100mm biplate 10/pk.......................................J123

BluEcoli™/CNA,  
15x100mm biplate, 10/pk.......................................J116
Inoculate both sides of this biplate with the urine specimen. If the infecting organism is *E. coli*, the colonies on the chromogenic side of the biplate will turn blue.²

The blue color is confirmatory! No further confirmation or indole testing is required.³ With the BluEcoli™ Urine Biplate, you can select a colony from the blood agar side of the biplate for susceptibility testing.


² Colonies of the serotype *E. coli* O157, which are not usually associated with urinary tract infections, are an exception, and will not turn blue on the chromogenic side of the BluEcoli™ Urine Biplate.

³ The performance of a spot indole test alone is not an adequate screen for *E. coli*, since there are at least 52 species of gram-negative bacilli that grow on MacConkey, are indole-positive and ferment lactose.
HardyCHROM™ Sakazakii is a chromogenic medium recommended for the selective isolation and differentiation of Cronobacter (Enterobacter) sakazakii from other members of the Enterobacteriaceae family based on colony color.

HardyCHROM™ Sakazakii facilitates the isolation and differentiation of C. sakazakii from other members of the family Enterobacteriaceae. C. sakazakii is a gram-negative, rod-shaped opportunistic pathogen that is associated with a rare, but life-threatening form of meningitis and necrotizing enterocolitis in neonates. The source of infection has been linked to the ingestion of powdered milk-based infant formula intrinsically contaminated by C. sakazakii. The organism is both thermotolerant and resistant to dessication, which enables it to survive manufacturing processes.

15x100mm plate, 10/pk........................................G315
• *C. sakazakii* produces smooth, bluish-green colonies on *HardyCHROM™ Sakazakii* as a result of unique bacterial enzyme interactions with chromogenic substances.

• Other members of the family *Enterobacteriaceae* will produce white or colorless colonies with or without black centers.

• All gram-positive bacteria and yeast will be inhibited on this medium.
Hardy Diagnostics has a Quality Management System that is certified to ISO 13485 and is a FDA licensed medical device manufacturer.

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