
# HARDYCHROM™ CANDIDA

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| Cat. no. G301 | HardyCHROM™ Candida, 15x100mm Plate, 18ml | 10 plates/bag |

## INTENDED USE

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.

## SUMMARY AND PRINCIPLES

HardyCHROM™ Candida is a selective and differential medium containing chromogenic substrates. After degradation by specific enzymes, the substrates release different colored compounds. Certain species or groups of organisms can then be differentiated with a minimum number of confirmatory tests.

Colonies of *C. albicans* appear green to dark metallic green, *C. tropicalis* colonies appear medium blue to dark metallic blue with a blue halo, and *C. krusei* colonies appear flat, often rough or crenated, and pink to medium pink in color. Other species appear pink, often with a darker mauve center ( *C. glabrata* and other species). Other yeasts may appear white to pink.

Additionally, HardyCHROM™ Candida can be used in conjunction with Rapid Trehalose Broth (Cat. no. Z205) or GlabrataQuick™ (Cat. no. Z298) to aid in the identification of *C. glabrata* . When HardyCHROM™ Candida is used as the primary plating medium, only colonies that morphologically (pink, often with a darker mauve center) resemble *C. glabrata* should be tested for trehalose assimilation.

HardyCHROM™ Candida contains glucose and selected peptones as a nutrient supply. Chromogenic substrates are incorporated to enable the production of different colored compounds when degraded by specific enzymes formed by the yeast. Chloramphenicol is added as an inhibitory agent against the growth of most bacteria, which may be present in the sample.

## FORMULA

Ingredients per liter of deionized water:*

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| Glucose | 20.0gm |
| Peptone | 10.0gm |
| Chromogenic Mixture | 2.0gm |
| Chloramphenicol | 0.5gm |
| Agar | 15.0gm |

Final pH 6.1 +/- 0.2 at 25ºC.

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

## STORAGE AND SHELF LIFE

Storage: Upon receipt store at 2-8ºC. 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." The "Guidelines for Isolation Precautions" is available from the Centers for Disease Control and Prevention at www.cdc.gov/ncidod/dhqp/gl_isolation.html.

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.

Refer to the document SDS Search instructions on the Hardy Diagnostics' website for more information.

## PROCEDURE

Specimen Collection: Consult listed references for information on specimen collection. [1-8] Infectious material should be submitted directly to the laboratory without delay and protected from excessive heat and cold. If there is to be a delay in processing, the specimen should be inoculated onto an appropriate transport media and refrigerated until inoculation.

Consult the listed references for information regarding the processing of specimens. [1-9]

**Protect media from light during storage and incubation as the product is light sensitive.**

Method of Use: Allow the plates to warm to room temperature. The agar surface should be dry prior to inoculating. Inoculate and streak the specimen as soon as possible after collection. If the specimen to be cultured is on a swab, roll the swab over a small area of the agar surface. Streak for isolation with a sterile loop. Incubate plates in an inverted position, protected from the light, aerobically at 35ºC. with increased humidity for 48 hours.

Most pathogenic strains of yeast grow at 35ºC. Some strains, other than *C. albicans* , *C. krusei* , *C. glabrata* and *C. tropicalis* , may fail to grow at 35ºC. If cultivation of all yeast strains is desired, the recommended incubation

temperature is 30ºC. for up to 7 days, since the lower temperature will slow the growth.

## INTERPRETATION OF RESULTS

Examine plates for colonies showing typical morphology and color.

Some strains may show sufficient growth and color development to be read at 24 hours, however, all plates should be incubated for at least 48 hours to allow for adequate color development. Colors will intensify with age.

A medium size, smooth, green to dark metallic green colored colony at 48 hours is identified as *Candida albicans* . Colonies will appear light green at 24 hours.

A medium size, smooth, medium blue to dark metallic blue colored colony, with a blue halo, at 48 hours is identified as *Candida tropicalis* . Colonies will appear blue to blue-pink at 24 hours.

A large, flat, spreading, often rough or crenated, pink to medium pink colored colony is identified as *Candida krusei* .

A medium size, smooth, pink colored colony, often with a darker mauve center, is presumptively identified as *Candida glabrata* ; thus a Rapid Trehalose test is needed (see "Limitations" below).

Other yeasts are generally small, white to pink colored colonies.

## LIMITATIONS

*Candida* spp. other than *C. glabrata* may present white to pink colored colonies on HardyCHROM™ Candida which is why *C. glabrata* must be confirmed using Trehalose assimilation. Refer to the Rapid Trehalose Broth (Cat. no. Z205) or GlabrataQuick™ (Cat. no. Z298) technical information sheet for additional information concerning the definitive identification of *C. glabrata* . Colonies that are 24 hours old may be used to test for rapid Trehalose assimilation.

Some strains of yeast, other than *C. albicans* , *C. krusei* , *C. tropicalis* , and *C. glabrata* , may fail to grow at 35 degrees C. If cultivation of all yeast strains is desired, the recommended incubation is 30 degrees C. for up to 7 days.

Isolates of *C. dubliniensis* will grow on this medium and will produce colors similar to or slightly different from *C. albicans* on primary isolation. The color variation will be lost upon subculture, so additional testing may be required to differentiate the two species.

This product is not intended for the isolation and identification of *Cryptococcus* spp.

Color-blind individuals may encounter difficulty in distinguishing the color differences on HardyCHROM™ Candida.

Refer to the document "Limitations of Procedures and Warranty" for more information.

## MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as loops, other culture media, Rapid Trehalose Broth (Cat. no. Z205), GlabrataQuick™ (Cat. no. Z298), incinerators, and incubators, etc., as well as serological and biochemical reagents, are not provided.

## QUALITY CONTROL

Hardy Diagnostics tests each lot of commercially manufactured media using appropriate quality control microorganisms and quality specifications as outlined on the Certificates of Analysis (CofA). The following organisms are routinely used for testing at Hardy Diagnostics:

| Test Organisms | Inoculation Method* | Incubation | | | Results at 24 hours | Results at 48 hours |
|---|---|---|---|---|---|---|
| | | Time | Temperature | Atmosphere | | |
| *Candida albicans* ATCC ® 10231 | B | 24-48hr | 35°C | Aerobic | Growth; smooth, light green colonies | Growth; smooth, emerald green to dark metallic green colonies |
| *Candida tropicalis* ATCC ® 750 | B | 24-48hr | 35°C | Aerobic | Growth; smooth, blue to blue-pink colonies | Growth; smooth, medium blue to dark metallic blue colonies, with a blue halo |
| *Candida krusei* ATCC ® 14243 | B | 24-48hr | 35°C | Aerobic | Growth; flat, pink to medium pink, spreading, colonies | Growth; flat, pink to medium pink, large, spreading, rough, crenated colonies |
| *Candida glabrata* ATCC ® 66032 | B | 24-48hr | 35°C | Aerobic | Growth; smooth, pink colonies | Growth; smooth, pink colonies, often with a darker mauve center |
| *Escherichia coli* ATCC ® 25922 | B | 24hr | 35°C | Aerobic | Partial to complete inhibition | Partial to complete inhibition |

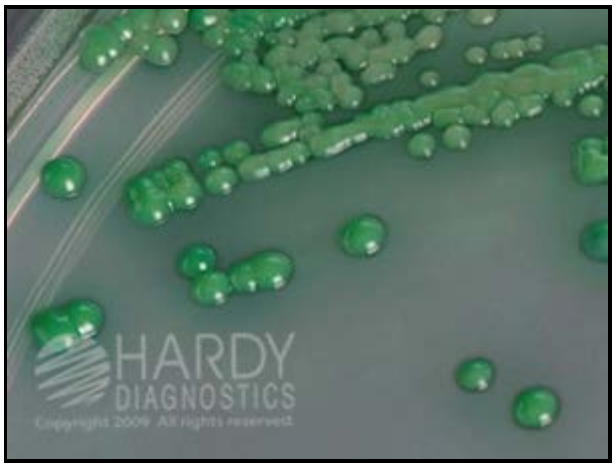
* Refer to the document "Inoculation Procedures for Media QC" for more information.

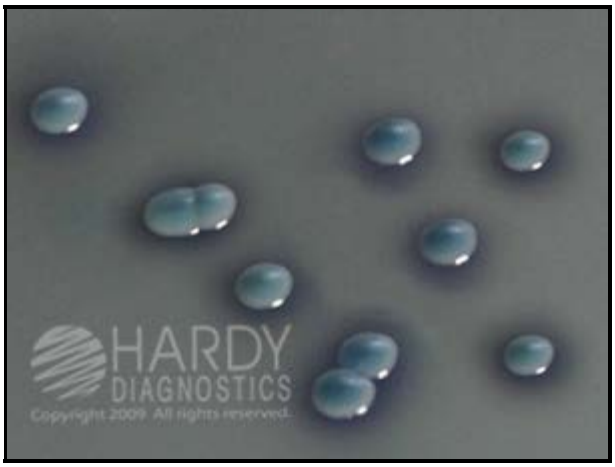
### USER QUALITY CONTROL

End users of commercially prepared culture media should perform QC testing in accordance with applicable government regulatory agencies, and in compliance with accreditation requirements. Hardy Diagnostics recommends end users check for signs of contamination and deterioration and, if dictated by laboratory quality control procedures or regulation, perform quality control testing to demonstrate growth or a positive reaction and to demonstrate inhibition or a negative reaction, if applicable. Hardy Diagnostics quality control testing is documented on the certificates of analysis (CofA) available from Hardy Diagnostics Certificates of Analysis website. In addition, refer to the following document "Finished Product Quality Control Procedures," for more information on QC or see reference(s) for more specific information.

## PHYSICAL APPEARANCE

HardyCHROM™ Candida should appear transparent, and white to light amber in color.



*Candida albicans* (ATCC ® 10231) colonies growing on HardyCHROM™ Candida (Cat. no. G301). Incubated aerobically for 48 hours at 35ºC.

*Candida tropicalis* (ATCC ® 750) colonies growing on HardyCHROM™ Candida (Cat. no. G301). Incubated aerobically for 48 hours at 35ºC.


*Candida krusei* (ATCC ® 14243) colonies growing on HardyCHROM™ Candida (Cat. no. G301). Incubated aerobically for 48 hours at 35ºC.


*Candida glabrata* (ATCC ® 66032) colonies growing on HardyCHROM™ Candida (Cat. no. G301). Incubated aerobically for 48 hours at 35ºC.

## REFERENCES

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5. Haley, L.D., et al. 1980. *Cumitech 11; Practical Methods for Culture and Identification of Fungi in the Clinical Microbiology Laboratory*, Coordinating ed., J.C. Sherris. American Society for Microbiology, Washington, D.C.

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