

ichrome™ *Bacillus cereus* Agar (ic27013)

Is a differential medium recommended for the rapid detection of *Bacillus Cereus* by chromogenic method.

Industry: Food / Clinical

Principles & Uses

A majority of *Bacillus* species are generally considered non-pathogenic, except for notable exceptions like *Bacillus anthracis*, which causes anthrax, and *Bacillus cereus*. Some species within the *B. subtilis* group have also been associated with food poisoning and various infections in humans and animals. *Bacillus cereus* can lead to food poisoning when contaminated starchy foods like rice, potatoes, pasta, and cheese are consumed. It has been linked to conditions such as eye infections, abscess formation, meningitis, septicemia, and wound infections.

iChrome™ *Bacillus Cereus* Agar, is used to enumerate *Bacillus cereus* and *Bacillus thuringiensis*, particularly in certain food products.

Peptone serves as a vital source of amino acids, nitrogen, carbon, essential minerals, and vitamins necessary for bacterial growth. Yeast extract is particularly rich in B-group vitamins. Additionally, sodium pyruvate provides an energy source. The chromogenic mixture enables the identification of bacteria based on their colony colors. Agar functions as the solidifying agent in this medium. Selectivity is achieved through the combined action of polymyxin B and trimethoprim. Polymyxin B effectively inhibits most Gram-negative organisms, as well as certain Gram-positive bacteria, including various *bacilli* apart from *B. cereus*. Trimethoprim, by blocking folic acid synthesis necessary for cellular replication, demonstrates activity against numerous Gram-positive bacteria, such as *S. aureus*, *Enterococcus spp*, and specific non-cereus *Bacillus spp*.

Both *B. cereus* and *B. thuringiensis* appear as blue/green colonies because they share similar biochemical characteristics.

Composition (per L)

Yeast Extract and Peptone 13 gr, Sodium pyruvate 1 gr, Lecithin 1 gr, Polymyxin B 10 mg, Trimethoprim 10 mg, chromogenic Mix 1.2 gr, agar 12.3 gr.

Final pH at 25°C 7.2 ± 0.2

Preparation from dehydrated Powder

Suspend 14.2 g of the medium in 500 ml of purified water. Autoclave at 121°C for 15 minutes. Allow to cool to 50 °C, add the content of one vial from both iChrome™ *Bacillus cereus* supplements. Mix well and pour into sterile petri dishes.

Quality Control

Dehydrated Appearance: Light beige, free-flowing, homogeneous.

Prepared Appearance: Light amber, slightly opalescent.

Reaction of 2.8% Solution at 25°C: pH 7.2 ± 0.2

Cultural Response

Cultural response was observed after 18-48 hours of incubation at 35 ± 2°C.

Organism (ATCC*)	Recovery	Colony Color	Lecithinase Activity
<i>Bacillus cereus</i> (11778)	Good	Blue-Green	+
<i>Bacillus subtilis</i> (6633)	No Growth	-	-
<i>Escherichia coli</i> (25922)	No Growth	-	-

*ATCC is a registered trade mark of the American Type Culture Collection.



Bacillus cereus with blue-green colonies and halos, indicating lecithinase activity. The background is darkened for better visibility of colonies.

Storage

Store supplement, dehydrated medium and prepared medium at 2-8 °C.