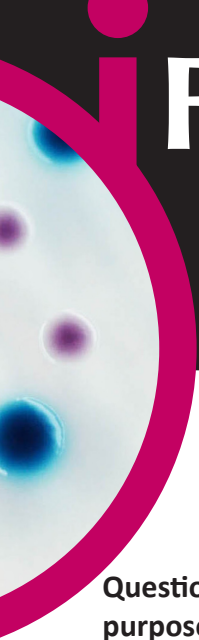


Focus On...

CHROMagar™ STEC

Questions & Answers



Question No. 1: What is the purpose of CHROMagar STEC?

CHROMagar™ STEC was designed to detect a wide range of Shiga-toxine-producing *E.coli* (STEC). STEC will grow in mauve colony color while other bacteria will grow in blue, colourless colonies or are inhibited, making this medium an excellent screening tool.

Question No. 2: Which STEC serotypes can we detect with CHROMagar™ STEC?

More than 200 STEC serotypes have been reported in the literature. The performance evaluations of CHROMagar™ STEC have been so far carried on the most common serotypes (called by many, the Big 6). The sensitivity for each of these serotype are shown in Table 1.

| Serotype | Number of isolates | Sensitivity |
|----------|--------------------|-------------|
| O157 | 361/372 | 97% |
| O26 | 132/135 | 98% |
| O45 | 1/1 | 100% |
| O103 | 53/71 | 75% |
| O111 | 52/54 | 96% |
| O121 | 26/29 | 90% |
| O145 | 32/35 | 91% |

Table 1 - Internal Figures
Unpublished



STEC bacteria, threat for food industry

What is the Big Six?

“The Big Six is a phrase commonly used to indicate six subtypes of E. coli that cause over 80% of human foodborne illnesses attributed to non-O157 STECs each year in the U.S. The Big Six include O26, O111, O121, O103, O145 and O45. They do not include the deadly O104 strain that caused the recent outbreak in Europe.”

Changing Public Health’s Approach to Non-O157 STECs BY DR. RICHARD RAYMOND | SEP 13, 2011

Question No. 3: What is the difference between CHROMagar STEC and CHROMagar O157?

CHROMagar™ O157 is for the differentiation of *E.coli* O157 from other bacteria, while CHROMagar™ STEC was designed to differentiate a wide range of Shiga-toxine-producing *E.coli* (including the O157 serotype) from other bacteria. Both media are for presumptive identification and results have to be confirmed by additional tests.

Question No. 4: Why should we detect STEC strains?

An increasing and worrisome number of studies have lately shown that, non-O157 ShigaToxin-producing *E.coli* (STEC) have been responsible for foodborne poisoning outbreaks such as the *E.coli* outbreak in Germany.

The CDC has also reported warnings about this potential risk:

“Disease caused by Shiga toxin-producing Escherichia coli (STEC) ranges from self-limiting diarrhea to hemorrhagic colitis and hemolytic uremic syndrome (HUS). Serotype O157:H7, the most frequently implicated STEC causing hemorrhagic colitis and HUS, has been isolated from large foodborne outbreaks, as well as sporadic cases, in North America and abroad. However, 60 STEC serotypes have been implicated in diarrheal disease, and several non-O157:H7 serotypes have been implicated as the cause of foodborne outbreaks and HUS in the United States, Europe, and Australia. Studies from Canada, Europe, Argentina, and Australia suggest that non- O157:H7 STEC infections are as prevalent, or more so, than O157:H7 infection.”

CDC report « Prevalence of Non-O157:H7 Shiga Toxin-Producing Escherichia coli in Diarrheal Stool Samples [...]»

Therefore, several regulatory authorities worldwide urge food industry to implement measures to control the absence of such organisms in their production.

Focus On...

CHROMagar™ STEC



Questions & Answers



Question No. 5: Could you explain the new «regulation» launched recently by the USDA?

What does it imply?

3 weeks ago, the "U.S. Department of Agriculture (USDA) announced that the USDA and its Food Safety and Inspection Service (FSIS) moved forward with the rule-making process to get the Big Six non-O157 Shiga toxin-producing *E. coli* (STECs) declared as adulterants in ground beef."

"It is the USDA's goal to have the rule in effect and begin testing in March, 2012."

Changing Public Health's Approach to Non-O157 STECs BY DR. RICHARD RAYMOND | SEP 13, 2011

Question No. 6: How can we differentiate, on CHROMagar™ STEC, the STEC strains from others?

It is very simple: STEC colonies turn mauve while others are blue or inhibited. CHROMagar™ STEC comes in dehydrated form, very easy to prepare (an agar base and a supplement). It is also available as ready to use plates in some countries.

Question No. 7: Are there any studies/publications available?

Not yet. Despite the CHROMagar™ STEC has been used during the recent outbreaks in Japan

(*E. coli* O111), in Germany and France (*E. coli* O104), the publications have been limited to general reports by the respective national reference laboratories*.

Question No. 8: Is there any other media, chromogenic or traditional, specially designed for the detection of STECs?

No, there is no other commercially available media, nor chromogenic nor traditional, dedicated to STEC strains. Once again, CHROMagar™ innovative spirit lead by Dr. Alain Rambach, has pioneered this important microbiology challenge.

Question No. 9: What packaging sizes are available for CHROMagar™ STEC?

Two pack sizes are available: for 1000ml (product code ST160) and for 5000ml (product code ST162). Each pack reference includes, as a kit, an agar base bottle and the required supplement vials (2x500ml and 5x1000ml, respectively).

Also available, an optional supplement selective for the *E. coli* O104 strain from the German outbreak (product code OG2011).



Typical colonies appearance on CHROMagar™ STEC medium after 24H incubation

* CHROMagar STEC used by:
-Germany: Dr. Lothar Beutin, from the Germany Reference Laboratory for *E. coli*
- France: Pasteur Institute
Contact us for more information.

CHROMAGAR TEAM | OCT 13, 2011

CHR**Magar**
The Chromogenic Media Pioneer

Order References

Please use these product references for future purchases:

1000 ml pack ST160 (Product = base powder ST160(B) + supplement ST160(S))
5000 ml pack ST162 (Product = base powder ST162(B) + supplement ST162(S))
1000ml CHROMagar STEC + CHROMagar O104 supplement ST160 + OG2011
5000ml CHROMagar STEC + CHROMagar O104 supplement ST162 + 5 x OG2011

CHROMagar
4 place du 18 juin 1940
75006 Paris - France

CHROMagar@CHROMagar.com