

Coliscan[®] S Easygel[®] for Differentiating Sorbitol Positive from Sorbitol Negative *E. coli*

This patented medium is useful for the identification and differentiation of beta glucuronidase positive, sorbitol positive strains of *E. coli* (93-97% of *E. coli* strains) and glucuronidase negative, sorbitol negative strains of *E. coli* (3-7% of *E. coli* strains which are commonly toxigenic, such as strain 0157:H7). The medium also indicates other general coliforms which are sorbitol positive.

The method utilizes a chromogenic enzyme substrate mix (glucuronide and galactoside) as well as the inclusion of the sugar sorbitol with a pH indicator to identify those organisms which ferment the sorbitol with acid production.

The gelled medium in a freshly poured dish should have a pronounced pink/red color. If the gelled medium is yellow, either the test sample was of a low pH or the medium had aged at room temperature. If that is the case, 1-2 drops of sterile "soluble base" solution (included with the medium) should be added to the liquid medium prior to adding the sample and pouring the dish.

The dishes should be viewed against a brightly lighted white background. A viewer consisting of a clear glass or plexiglass which is elevated over a white background that is illuminated by a high intensity white light is best.

Remember that as incubation time increases, colony size increases and more products (acids) are made which affect the appearance of the medium. See these effects as illustrated in the 20, 24, 28, 34 hr. photos of the same dish. Notice that yellowing is most prominent where there are more blue *E. coli* colonies concentrated.

On an uncrowded dish, most *E. coli* strains grow as dark blue/purple colonies with a yellow zone around the colony. (Glucuronidase positive, sorbitol positive)

E. coli strains which are glucuronidase negative and sorbitol negative grow as dark pink/red colonies without any trace of yellow zone (in an uncrowded dish). This is typical of the toxigenic 0157:H7 strain.

Other coliform species grow as pink/red colonies with a yellow zone around the colony (in an uncrowded dish).

Most other non-coliform gram negative bacteria grow as colorless or whiteish colonies with a yellow zone.

The medium should be incubated at 35-37° C. and should be read at 20-30 hrs. (Longer incubation may result in problems of good differentiation between the standard coliforms (sorbitol positive) and any sorbitol negative *E. coli*, especially if the dish is crowded with colonies.)

Optimum, easy to read, differentiation among the bacterial types is best when the dish is not crowded with colonies (no more than 100-200), so that there is at least a 3-4 mm distance between different colonies (see photo on web site). If the dish is crowded with sorbitol positive *E. coli* or other sorbitol positive coliforms, the entire dish background color may be solid yellow (see photo on web site), making the differentiation of possible sorbitol negative colonies difficult. (Glucuronidase negative, sorbitol negative *E. coli* tend to be the same colony size as other *E. coli*, but are dark pink. Other coliforms tend to be smaller colonies and lighter pink.)

Methods and Media are only as good as the persons who use them. Experience and the ability to interpret results vary among technicians. This variable means that results are always subject to human error of poor technique and incorrect conclusions. Micrology Laboratories disclaims responsibility for erroneous positive or negative results, and suggests that whenever positive results are thought to be present, they should be subject to further testing and additional methods by a certified testing laboratory.

Micrology Laboratories, LLC. Phone 574-533-3351 or 888-327-9435

*U.S. Patent 5210022, 5393662, 5698260 & 6699685B1.

© Easygel and Coliscan are registered trademarks of Micrology Laboratories, LLC., USA