

INTENDED USE

Pro-Lab *E. coli* O157 Antiserum is for use in the slide agglutination test for the presumptive identification of *Escherichia coli* serotype O157 antigen on laboratory culture media.

SUMMARY AND EXPLANATION

Escherichia coli serotype O157:H7 is a verotoxin producing (VT-producing) pathogen.^{1,2} This serotype has been reported as an etiological agent in sporadic and outbreak cases of haemorrhagic colitis.^{3,4,5} It is also associated with haemolytic uraemic syndrome.⁶ Certain *E. coli* serotypes other than O157:H7 also produce verotoxin.^{7,8,9} However, the diarrhoea caused by these other serotypes is not usually bloody. Additionally, *E. coli* serotype O157:H7 does not ferment sorbitol whereas the majority of other serotypes do ferment sorbitol.^{10,11} Therefore, if Sorbitol-MacConkey agar medium is used as a primary screen, the colonies of *E. coli* serotype O157:H7 appear colourless (non-sorbitol fermenting colonies - NSFC) while colonies of other serotypes appear characteristically pink (sorbitol fermenting colonies - SFC).¹¹

The work of Kauffmann¹², Edward and Ewing¹³, Ewing¹⁴ and Orskov¹⁵ contributed to the development of a system for serological typing of *E. coli* cultures and resulted in an antigenic classification scheme which can be used to identify the serotypes of *Escherichia coli* which are associated with bacteriuria or diarrheal disease.

The principle of the test involves mixing the suspected organisms with the antiserum containing *E. coli* O157 antibodies. The bacteria will agglutinate (clump) in the presence of homologous antiserum.


REAGENTS

Pro-Lab *E. coli* O157 Antiserum is prepared using delipidized, whole absorbed rabbit serum containing antibodies to *E. coli* serotype O157.

The antiserum is to be used for the presumptive identification or confirmation of cultures which have been previously characterized biochemically

Pro-Lab *E. coli* O157 Antiserum is supplied in a dropper bottle containing 3.0 ml of ready-to-use diluted antiserum with 0.01% thimerosal as preservative.

PRECAUTIONS

1. Do not use antiserum after the expiry date shown on the product label.
2. The antiserum contains thimerosal,  which is a highly toxic mercury based compound. Although the amount of thimerosal

in the antiserum is minimal, safety precautions should be taken in handling, processing and discarding the reagent.

3. Avoid contamination of the reagent bottle.
4. The test specimen may contain organisms pathogenic to man and should be handled and discarded as infectious material.
5. The reagent is intended for *in vitro* diagnostic use only.
6. The procedures, storage conditions, precautions and limitations specified in these directions must be adhered to in order to obtain valid test results.

MATERIAL REQUIRED BUT NOT PROVIDED

Glass Slides
Normal Saline (0.85% sodium chloride solution)
Disposable or Wire Loops
Toothpicks

STABILITY AND STORAGE

Pro-Lab *E. coli* O157 Antiserum should be stored tightly capped at 2° to 8°C. Stored under these conditions the antiserum may be used up to the date of expiry shown on the product label.

SPECIMEN COLLECTION AND CULTURE PREPARATION

Clinical specimens should be cultured on Sorbitol-MacConkey medium. NSFC may be subcultured on non-selective agar medium. Colonies from overnight growth must be cleanly removed from agar surface for testing using a sterile loop. Young, fast growing cultures will yield typical results.

PROCEDURE

1. Place two separate drops of normal saline (0.85% sodium chloride) on a clean glass slide.
2. Take a suspect *Escherichia coli* colony from an overnight culture plate and mix thoroughly with both drops of normal saline on the slide to obtain a smooth suspension.
3. Add one drop of antisera to one of the bacterial suspension drops on the slide, to the other (control) add one drop of normal saline.
4. Mix the antiserum with the bacterial suspension using a toothpick. Then mix the saline (control) with a fresh toothpick.
5. Gently rock the slide back and forth for one minute and observe for agglutination under normal lighting conditions or using a low power objective.

INTERPRETATION OF RESULTS

A distinct agglutination (granular clumping) in the antiserum test, within 60 seconds, is regarded as a positive result. There must be no agglutination in the saline control or else the test is not valid (auto-agglutination).










LIMITATIONS OF THE PROCEDURE

1. A normal saline control should be included in every test to insure the specificity of the reaction.
2. Rough strains give auto-agglutination in slide tests. False positives usually agglutinate in control saline.
3. It is recommended to check the potency of *Escherichia coli* antisera with stock cultures of known antigenic structure.

REFERENCES

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	= Use by
	= Lot number
	= Attention, see instructions for use
	= Catalogue number
	= Manufacturer
	= Authorized Representative in the European Community
	= In vitro diagnostic medical device
	= Temperature limitation
	= Consult instructions for use