

ESCHERICHIA COLI DIAGNOSTIC ANTISERA



STATENS
SERUM
INSTITUT

*prevents and controls
infectious diseases,
biological threats and
congenital disorders*

FOR IN VITRO DIAGNOSTIC USE



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Antisera for serotyping of *E. coli* strains

For *in vitro* diagnostic use at Human, Veterinary and Food Laboratories, Public Health and Reference Centres.

Introduction

Statens Serum Institut (SSI) develops, manufactures and markets diagnostic *E. coli* antisera for Human, Veterinary and Food Laboratories, Public Health and Reference Centres.

SSI is the only company in the world offering full range of *E. coli* antisera, more than 350 different *E. coli* products to customers all over the world.

All the antisera are developed in close relationship with the International *Escherichia* and *Klebsiella* Centre (WHO) at SSI, to ensure development of products and guidance of clinical and epidemiological relevance. This cooperation guarantees high quality serological products. Our highly skilled personal offer professional assistance at any topic concerning *E. coli* diagnostic.

Products for *in vitro* diagnostic

- O antisera
- OK O antisera
- H antisera

Additional products

- K1 and K5 bacteriophages, K antisera and selected F antisera
- *E. coli* strains including test and reference strains for O, K, H and F antigens, various toxins and virulence factors. Approximately 60.000 *E. coli* strains are available
- SSI Enteric Medium

Description

The polyclonal rabbit antisera are produced by immunization with well defined reference strains. If possible the antisera have been rendered specific by absorption. The SSI antisera have a very high specificity and are controlled by a panel of wild type strains.

All SSI antisera are delivered in dropper bottles and are very easy to use.

The amount of test for each product is stated in the product catalogue.

Shelf life and storage

If stored in the dark at 2-8°C all the antisera are stable for 4 years from production. The antisera should not be frozen.

Typing support

Non typable strains may be sent to the International *Escherichia* and *Klebsiella* Centre (WHO). Please enquire about the charges related to this service.

Ordering and information

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O antisera for serotyping of *E. coli* strains

For agglutination of boiled cultures in microtiterplates.

Target groups

Human and Veterinary laboratories, Public Health and Reference Centres.

Background

SSI produce *E. coli* O antisera as single antisera and as pools, intended for screening and complete O serotyping of *E. coli*. The pools are developed at SSI in order to be able to screen for human and animal pathogenic groups of *E. coli* e.g. EPEC, VTEC etc. based on their clinical and epidemiological relevance.

Products

- O pool antisera, 1-15 (3 mL vials)
- O pool antisera, A-W (3 mL vials)
- O single antisera, O1-O181 (3 mL vials, standard or high titre)

Application

The most convenient way to serotype O antigen is in microtiterplates (round bottoms). The monospecific single antisera are used for definitive typing. They are unique because they eliminate cross-reactions with other *E. coli* antigens saving time in labour and cost of additional tests.

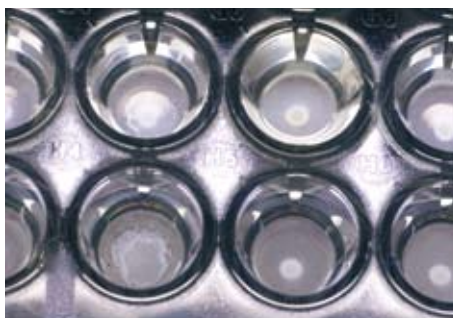


Table 1

O pool antisera recommended for testing specific clinical and epidemiological groups

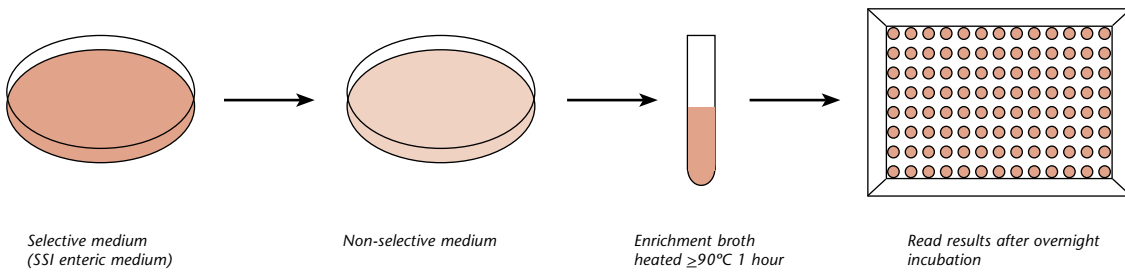
Groups	O pool antiserum	O single antisera included in the pool
EPEC & VTEC/STEC	1	26, 55, 103, 111, 121, 128abc, 145, 157
VTEC/STEC	2 and 3	2, 5, 8, 74, 76, 84, 91, 113, 117, 118, 119, 146, 174, 176, 177
EPEC	4	86, 88, 114, 125abc, 126, 127, 142, 158
A/EEC	5 and 6	3, 15, 33, 44, 45, 49, 51, 63, 71, 85, 109, 129, 132, 137, 153, 167
EIEC	7	28ac, 29, 112ac, 124, 136, 143, 144, 164
ExPEC	8 and 9	1, 2, 4, 6, 7, 8, 9, 12, 15, 16, 17, 18ac, 22, 25, 75, 101
Piglet diarrhoea	10	8, 45, 64, 138, 139, 141ac, 147, 149, 157
Calf diarrhoea	1 and 15	5, 8, 9, 15, 20, 26, 55, 86, 103, 101, 111, 118, 121, 128abc, 145, 157
Poultry, pigs and sheeps	14	10, 18ab, 35, 83, 87, 95, 116, 120

For the composition of the O pools A-W see our product catalogue.

Table 2
Recommended screening methods

Target group	Screening method
Human, Veterinary and Food Laboratories Public Health Laboratories	Use selected monospecific single O antisera
For Reference Centres	Use all O pool antisera or partial screening against a selected panel of pools e.g.: EPEC & VTEC/STEC, VTEC/STEC (<i>eae+</i>), EIEC or piglet diarrhoea etc. Pool positive strains are tested in monospecific single O antisera

Procedure



OK O antisera for screening for EPEC & VTEC/STEC

For agglutination of live cultures.

Target groups

Clinical and Public Health Laboratories.

Products

- OK O pool antisera, 1-4 (3 mL vials)
- OK O single antisera (3 mL vials)

Table 3

OK O antisera recommended for specific clinical and epidemiological groups

Groups	OK O pool antiserum	OK O single antisera included in the pool
EPEC & VTEC/STEC	1	26, 103, 111, 145, 157
EPEC	2	55, 119, 125ac, 127, 128ab
EPEC	3	86, 114, 126, 142, 158
VTEC/STEC (USA)	4	45, 121

Background

E. coli OK O antisera are intended for a combined preliminary diagnosis of Enteropathogenic *E. coli* (EPEC) and Verocytotoxin-producing *E. coli* (VTEC the same as Shiga toxin producing *E. coli* (STEC)) - also referred to as Enterohaemorrhagic *E. coli* (EHEC). EHEC is a subgroup of VTEC that often causes bloody diarrhoea and/or haemolytic uraemic syndrome (HUS) or Thrombotic thrombocytopenic purpura (TTP).

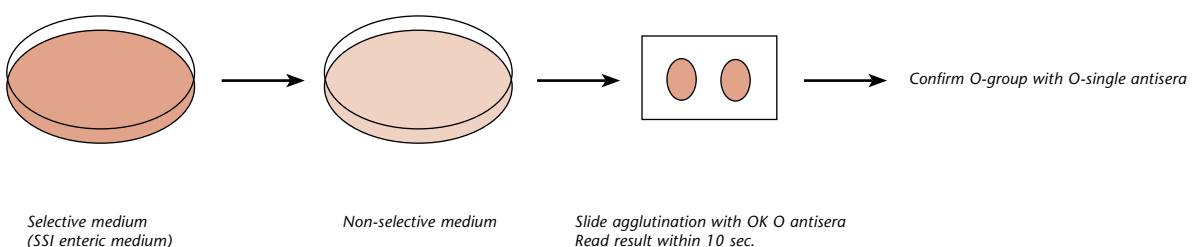
SSI have developed OK O pool antisera in order to screen for the most virulent *E. coli* strains belonging to the pathogenic groups: VTEC and EPEC. The pools will be updated whenever new virulent strains become important.

Application

EPEC and VTEC diagnostic antisera from SSI are intended for presumptive identification and O grouping by slide agglutination of certain diarrhoeagenic types of *E. coli*. This simple bacteriological test makes it possible to report the specimen and to select isolates for further specific virulence testing. The O-group should be confirmed with O-single antisera.

The O group does not correlate with the presence of specific virulence genes. Further testing is required in order to establish the pathogenic potential of each individual isolate.

Procedure



H antisera

For agglutination with formalin killed cultures.

Target groups

For Human and Veterinary Laboratories, Public Health and Reference Centres.

Products

- H pool antisera, A - F (3 mL vials)
- H single antisera, H1 - H56 (5 mL vials)

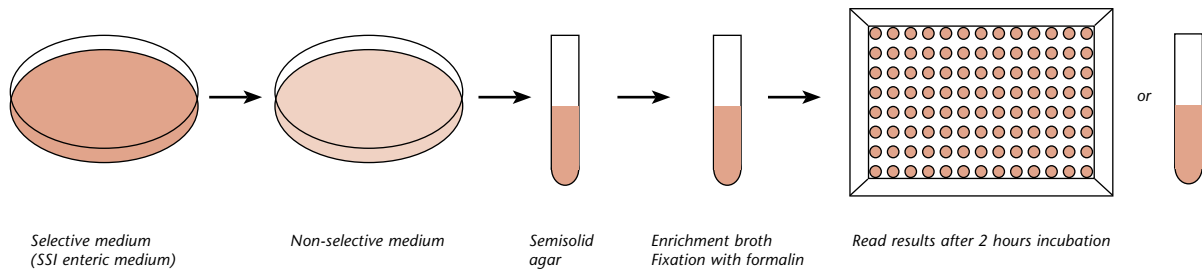
Background

SSI produces diagnostic *E. coli* H antisera that are intended for screening and complete H determination of all 53 known H antigens of *E. coli* by agglutination with formalin killed cultures.

Application

Typing of the flagellar H antigen is most easily done in glass tubes (Widall tubes of approximately 10 x 70 mm). It is also possible to make H-agglutination in microtiterplates. For a successful determination of the H antigen it is important that the organism is actively motile. Only some *E. coli* strains will be actively motile on ordinary agar plates. However, it is usually possible to get well-flagellated bacteria by passing the organism through a semi-solid agar medium.

Procedure



Reference

Orskov et al., Bacteriol Rev. 1977 September; 41(3): 667-710.

