

STEC TESTING SERVICES (SHIGA TOXIN-PRODUCING E.COLI)

ENSURING FOOD SAFETY THROUGH STEC TESTING AND PREVENTION SOLUTIONS

Intertek's STEC analysis methodology is viewed as the gold standard because of the sensitivity and the primers that are used. The kits are bespoke to ensure that they will identify DNA of specific E. coli serotypes.



What is Shiga Toxin-producing E.coli?

Shiga toxin-producing Escherichia coli (STEC) represent a part of the bacterial species E. coli, with a common feature being the production of one or more Shiga-like toxins (Stx genes). While the group is a subset of one species, it is diverse in terms of serology and virulence factors expressed. The most important serotype is E. coli O157:H7, which first rose to prominence in the early 1980s.

There are five main transmission routes for human infection:

- Foodborne
- Waterborne
- Soft cheeses
- Direct or indirect contact with animals/meats
- Person-to-person spread

Food vehicles linked to transmission include ground beef, fresh salad and vegetables, improperly prepared dried and fermented sausages, milk/milk products and unpasteurised apple juice. Sprouted seeds and water have been the vehicles responsible for some of the largest outbreaks.

Our services to help you

Intertek has been accredited since 2018 for STEC by PCR (Polymerase chain reaction) in raw meat and leafy vegetables. This method offers rapid time to results with detection against E. coli O157:H7 and the Top 6

non-O157 serogroups of STEC (O26, O45, O103, O111, O121, and O145).

PCR is considered to be the gold standard method, particularly with US authorities, because of the precision it generates. It is a highly sensitive method which will look at markers for gene expression, Stx1, Stx2 and eae gene from enteropathogenic E. coli, which can therefore be used in assessment for virulence. Additional support includes:

- Bespoke inspections
- Problem solving for persistent issues
- Hygiene services to recommend best practice with respect to environmental testing and cleaning procedures

Our expertise

Outside of medical and veterinary laboratories, Intertek is one of the few contract testing laboratories with the capability to analyse STEC in food matrices.

The method utilises both Immunomagnetic separation plus specific DNA primers and probes to ensure accurate results within 26 hours. STEC testing is a regulatory requirement that proves organisations are carrying out their due diligence, as required by the end supplier or retailers. STEC analysis therefore helps to demonstrate the safety of the raw or manufactured food products. As supply chains evolve and an increased awareness of enteropathogenic E. coli in food supplies is elevated through

continued outbreaks, the expectation is that consumers, retailers and manufacturers will continue to require vigilant testing for STEC to prove food safety and protect brands. Organisations are advised to put in place plans to futureproof their operations. Testing protocols for STEC would evolve, based on results and risk, with the assistance of Intertek expertise such that all companies can demonstrate control and safety.

The Intertek Advantage

Intertek (ITS Testing Services (UK) Limited, trading as Intertek Food (UK)) is one of the few UK contract food laboratories accredited to perform STEC analysis to ISO 17025 standards. Our blend of expert analytical and advisory services aid our customers to achieve compliance and improve safety, quality and efficiency. We have the flexibility and the experience to develop strong partnership relationships, to help our customer's on their journey to ever-better.

FOR MORE INFORMATION



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