

Bacterial Enteric Pathogen, Isolate Identification

Use

Confirmation and identification of *Salmonella* spp., *Shigella* spp., *Escherichia coli* 0157, non-0157 shiga-like toxin-producing *E. coli* (STEC), *Campylobacter* spp., *Yersinia* spp., *Vibrio* spp., *Cronobacter* spp., *Aeromonas* spp., *Plesiomonas* spp., and *Listeria* spp. isolates.

Clinical Significance

The CDC estimates that each year 48 million Americans develop foodborne illnesses that result in 128,000 hospitalizations and 3000 deaths and costs the U. S. economy an estimated 8.4 billion dollars in lost productivity. Considering the large impact on public health, it is critically important that these infections be identified, and the isolates characterized as quickly as possible. Prompt identification of the causal agent can not only aid in diagnosis and implementation of individual patient management plans, but also ultimately reduce the number of infections in outbreak situations.

Further background information, fact sheets, statistics and educational resources may be found at the OSDH Infectious Disease Services [website](#).

Methodology

Isolates are inspected for purity before being subcultured and analyzed by traditional microbiological and biochemical methods and mass spectrometry. STEC isolates are subjected to serotyping. [PulseNet-reportable organisms](#), as defined by the CDC, are subjected to whole genome sequencing.

Specimen Type

- Pure, viable isolate grown on media that supports the growth of the bacterial isolate submitted.
- Specimen source and suspected organism information is required.

Minimum Volume/Size

- 1 media plate (preferred) or slant with visible growth

Collection Instructions

Primary specimens should be collected according to the submitting institution's standard procedure.

Common Causes for Rejection

- No growth
- Mixed cultures
- Non-viable organisms
- Frozen specimen
- Mismatch between patient identifiers on specimen label and test requisition form.

Shipping and Storage

- Store and ship at ambient temperatures (18-30°C) for delivery within 2 days of subculture.
- Place each specimen in an individually sealed bag.
- Submitters are responsible for packaging and shipping specimens according to regulatory requirements. If culture is suspected of being a microorganism identified on the IATA list as an infectious substance affecting humans, submit specimen according to Infectious Substance, Category A, shipping guidelines.
- Laboratory does not supply collection kits or shipping materials.

Turn-around Time

Test results are reported within 21 working days from receipt.

Reference Range

Complete identification of clinically significant isolates

Reportable Results

- Bacterial isolate, identification/confirmation
- Genus/species identified
- Isolate could not be identified to species level

Interpretation

The organism identified reflects characterization of the submitted isolate to the genus and species level and does not, by itself, establish causation of disease. Results should be interpreted in the context of the patient's clinical presentation and other laboratory findings.

Limitations/Interferences

Test results may be affected by improper specimen collection or transport, the presence of inhibitory substances, or technical factors. Results reflect analysis of the bacterial isolate submitted and may not necessarily represent the etiologic agent responsible for the patient's clinical presentation.

CPT Code

CPT codes will vary depending on the organism identified and methods used.

Notes

These tests are intended as an aid for infection control of enteric organisms in healthcare settings. These tests are not intended to guide or monitor treatment for enteric infections. Results of whole genome sequencing, if performed, are for epidemiological purposes only and are not reported to the submitter or patient.