

Division of Laboratory Medicine

Bacteriology

Clostridium difficile GDH EIA, and Toxin EIA and Toxin PCR

C. difficile is a Gram positive, spore forming, strictly anaerobic rod, so named because of the difficulty in original culture and characterisation. Toxigenic strains produce large protein toxins A and B, both being major virulence factors. Most diseases associated with *C. difficile* are intestinal though *C. difficile* may be isolated from blood or tissues. The laboratory uses the three-step testing algorithm recommended by the Department of Health and Social Care. This involves the specimen being tested using *C.difficile* GDH EIA, *C.difficile* Toxin EIA and *C.difficile* toxin PCR assays.

General information

Collection container (including preservatives): Collect specimens in appropriate CE marked leak proof containers and transport specimens in sealed plastic bags.



Specimen type: Faeces

Collection: Specimen may be passed into a clean, dry, disposable bedpan or similar container and transferred into a CE marked leak proof container. The specimen is unsatisfactory if any residual soap, detergent or disinfectant remains in the pan.

Specimen transport: Compliance with current postal and transportation regulations is essential.

Clinical samples should be collected into a sterile leak-proof container in a sealed plastic bag. Specimens should be transported and processed as soon as possible. If processing is delayed refrigeration is preferable to storage at room temperature.

Type and volume of sample: A liquid specimen of 2 mL is sufficient for culture and toxin detection.

2 gram (large pea-size) of unformed specimen

Special precautions: Formed/semi-formed stools are unsuitable for investigation for *C. difficile*.

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Laboratory information

Measurement units: Not applicable

Biological reference units: Not applicable

Turnaround time for provisional result (working days): 1 day

Turnaround time to final result (working days): 1 day. Please note that a 1-day TAT for high-risk samples cannot be achieved as the sample requires a clearance of CL3 pathogens before *C.difficile* toxin testing on DS2 analyser can be performed.

Clinical information

Clinical decision points: Not applicable

Factors known to significantly affect the results: The detection of *C. difficile* is dependent on the number of organisms present in the sample, reliable results are dependent on correct specimen collection, handling, and storage.

Limitations: Interpretation of toxin results in children less than 16 years old should be treated with caution.

(Last updated November 2025)