# VIASURE *MULTIPLEX*

## *Clostridium difficile toxins A+B* *Real Time PCR Detection Kit*

## Pathogen and product description

*Clostridium difficile* is a gram-positive, sporogenic, anaerobic bacillus that belongs to the *Clostridiaceae* family. Initially, *C. difficile* was described as a member of the commensal microbiota of neonates. However, later it was identified as a causal agent of antibiotic-associated diarrhea (AAD) and its infection is associated with high morbidity and mortality in the elderly.

The major risk factors for the *C. difficile* infection are broad spectrum antibiotics exposure, hospitalization and advanced age. The severity of its infection ranges from mild diarrhea and pseudomembranous colitis to toxic megacolon, perforations of the colon and occasionally, sepsis and even death. The main routes of transmission are the fecal-oral or aerosols. In fact, infected persons with acute diarrhea can lead to heavy contamination of the environment with spores, which can persist in dust or on surfaces for months and be transmitted to other hospitalized patients or to healthcare workers once again.

Toxigenic strains of *C. difficile* can colonize the gut, replicate and produce enterotoxin A and cytotoxin B, encoded by *tcdA* and *tcdB* genes. A Real-Time PCR based diagnosis has been described as a sensitive test for detection and identification of *Clostridium difficile* toxin A and/or B.

VIASURE *Clostridium difficile toxins A+B* Real Time PCR Detection Kit is designed for the diagnosis of gastroenteritis caused by *Clostridium difficile* in human stool samples. After DNA isolation, the identification of Toxin A and/or B of *Clostridium difficile* is performed by the amplification of a conserved region of the *tcdA* and *tcdB* genes using specific primers and fluorescent-labeled probes.

# *Clostridium difficile* toxins A+B
## Real Time PCR Detection Kit

VIASURE MULTIPLEX

## Analytical sensitivity

**VIASURE** *Clostridium difficile toxins A+B* Real Time PCR Detection Kit has a detection limit of ≥ 10 DNA copies per reaction (figures 1 and 2).

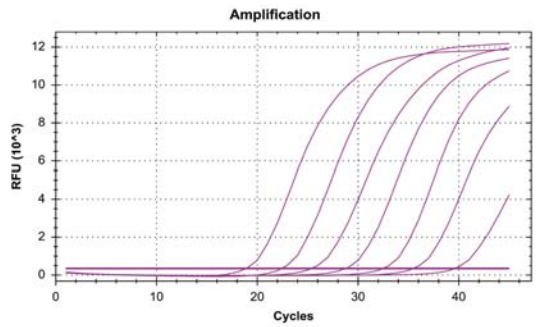


*Figure 1. Dilution series of Clostridium difficile Toxin A ($10^7$–$10^1$ copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System.*

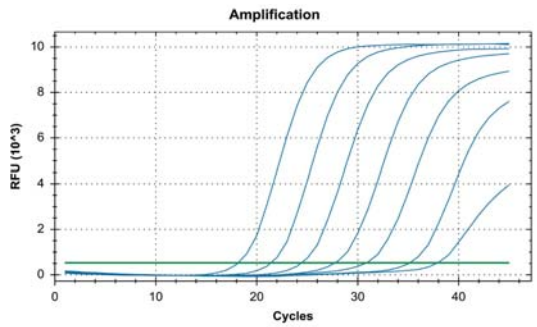


*Figure 2. Dilution series of Clostridium difficile Toxin A ($10^7$–$10^1$ copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System.*

## Components

| Reagent/Material | Description | Quantity |
|---|---|---|
| *Clostridium difficile toxins A+B* 8-well strips | A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format | 6/12 x 8-well strip |
| *Clostridium difficile toxins A+B* 96-well plate | A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format | 1 plate |
| Rehydration Buffer | Solution to reconstitute the stabilized product | 1 vial x 1,8 mL |
| *Clostridium difficile toxins A+B* Positive Control | Non-infectious synthetic lyophilized cDNA | 1 vial |
| Negative Control | Non template control | 1 vial x 1 mL |
| Water RNAse/DNAse free | Water RNAse/DNAse free | 1 vial x 1 mL |
| Tear-off 8-cap strips | Optical caps for sealing wells during thermal cycling | 6/12 x 8-cap strip |
| Shell Frame Grid | Shell Frame Grid | 1 or 2 |

## Kit References

| Reference | Description |
|---|---|
| VS-CDA106L | Viasure *Clostridium difficile toxins A+B* Real Time PCR Detection Kit 6 x 8-well strips, low profile |
| VS-CDA106H | Viasure *Clostridium difficile toxins A+B* Real Time PCR Detection Kit 6 x 8-well strips, high profile |
| VS-CDA112L | Viasure *Clostridium difficile toxins A+B* Real Time PCR Detection Kit 12 x 8-well strips, low profile |
| VS-CDA112H | Viasure *Clostridium difficile toxins A+B* Real Time PCR Detection Kit 12 x 8-well strips, high profile |
| VS-CDA113L | Viasure *Clostridium difficile toxins A+B* Real Time PCR Detection Kit 96-well plate, low profile |
| VS-CDA113H | Viasure *Clostridium difficile toxins A+B* Real Time PCR Detection Kit 96-well plate, high profile |

## Work Flow

One-step rehydration of wells and add your extracted DNA

**STEP 1**
Add 15 µl of rehydration buffer into each well

**STEP 2**
Add 5 µl of DNA sample / positive control / negative control

**STEP 3**
Load the strips into the thermocycler and run the specified protocol

**STEP 4**
Interpretate results


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