Objective: Clostridium difficile (CD) infection is the leading cause of nosocomial antibiotic-associated diarrhoea in adults and paediatric patients. There are a number of commercially available tests to detect the CD toxin A and/or B and the common antigen. A collection device with a liquid base transport medium compatible with different laboratory methods for the collection and storage of faecal specimen would be beneficial. This study was conducted to determine the compatibility of the Fecal Swab kit (Copan Italia) with tests, which detect CD toxins A/B and the common antigen, CD glutamate dehydrogenase.

Methods: 35 frozen faecal specimens, which tested positive previously for toxin A/B by CD TOX A/B® II EIA, were used to validate the Fecal Swab (FS) kit, which consists of a flocked swab for the collection of the faecal sample and a 2 ml tube of semi-solid Cary Blair for transportation. The swab was tested to determine the amount of faecal material collected, and to ensure that the concentration of faecal material required in each testing method was not affected by the dilution factor introduced by the swab. The flocked swab of the FS kit was used to process the exsanguinated clinical specimens. The kits used in this validation were: C. DIFF QUIK CHECK®, C. DIFF TOX A/B III, TOX A/B QUIK CHECK®, C. DIFF QUIK CHECK COMPLETE®, CD Toxin/Antitoxin test (TechLab), ImmunoCard CD Toxin A/B (Meridian), ProGastro™ Cd (Prodesse, Inc.) , and an in-house CD real-time PCR.

Objective: The commercial kits used in this validation were: C. DIFF QUIK CHECK®, C. DIFF TOX A/B III, TOX A/B QUIK CHECK®, C. DIFF QUIK CHECK COMPLETE®, CD Toxin/Antitoxin test (TechLab), ImmunoCard CD Toxin A/B (Meridian), ProGastro™ Cd (Prodesse, Inc.) , and an in-house CD real-time PCR. Testing of commercial kits was done according to the manufacturers’ specifications. The procedure for samples transported in liquid media was used for the faecal specimens in Fecal swab for the TechLab kits.

For the Meridian ImmunoCard, the enzyme conjugate was added directly to 200 microliters of faecal specimen in Fecal swab.

For a negative Fecal Swab kit was tested with each kit to check for interference.

Results:
The flocked swab collects ~150 mg of faecal material and no interference was found when un inoculated FS kits were tested with all methods. Out of 35 samples 33 were positive and 2 were negative with all methods including the two PCR methods. Two samples which tested positive originally with the CD Tox A/B® II EIA when retested were negative for the toxin.

Conclusions:
Copan Fecal Swab kit, a Liquid Based Microbiology pre-analytic device, can be used to collect faecal specimens for the detection of CD toxin A/B, CD glutamate dehydrogenase, toxin A, B, cytotoxin in cell culture and nucleic acid by PCR.