INFINITI® Candida Vaginitis QUAD Assay

Directional Package Insert (DPI)

For In Vitro Diagnostic Use

FOR EXPORT ONLY

Manufactured by AutoGenomics, Inc., 2980 Scott Street, Vista, CA USA 92081

Authorized EU Agent: Medical Device Safety Service GmbH (MDSS)
Schiffgraben 41, 30175 Hannover, Germany
INTENDED USE
The INFINITI Candida Vaginitis (CV) QUAD Assay is an in vitro diagnostic test for the detection and identification of five pathogens in genomic deoxyribonucleic acid (DNA) obtained from human endocervical and cervical specimens. The INFINITI CV QUAD is designed to identify the presence of the following five fungal pathogens: Candida albicans (CA), Candida glabrata (CG), Candida krusei (CK), Candida parapsilosis (CP), and Candida tropicalis (CT). The INFINITI CV QUAD is a qualitative assay for use in clinical laboratories upon prescription by the attending physician.

BACKGROUND INFORMATION
Vulvovaginal candidiasis (Candidal vulvovaginitis) is the second most common cause of vaginitis in the United States and the most common cause in Europe.1 An estimated 75 percent of women have vulvovaginal candidiasis at some time in life, and approximately 5 percent of women have recurrent episodes.2, 3-5 Candidiasis is often observed in immunocompromised individuals such as HIV-infected patients.

_Candida albicans_ is the infecting agent in 80 to 90 percent of patients.6,7 _C albicans_ is a diploid fungus that grows both as yeast and filmentous cells and a causal agent of opportunistic oral and genital infections in humans. Hospital-acquired infections by _C albicans_ have become a cause of major health concern.

Recently, the frequency of non-albicans species (e.g., _Candida glabrata, Candida krusei, Candida parapsilosis, and Candida tropicalis_) has increased, possibly secondary to greater use of over-the-counter antifungal products.5 Non-albicans species of _Candida_ account for a mere 5%-20% of the cases. Most of these infections with non-_albicans_ species of _Candida_ are due to _C glabrata_ (5%-10% of cases) or _C tropicalis_ (<5% of cases)10,11. Non-albican Candida are commonly found in complicated cases of vaginal thrush such that first line treatment is ineffective. These cases are more likely in immunocompromised patients.12 Candidiasis is often observed in immunocompromised individuals such as HIV-infected patients.

With the ever increasing population of immunocompromised individuals, trends have shown _C glabrata_ to be a highly opportunistic pathogen of the urogenital tract, and of the bloodstream (_Candidemia_). It is especially prevalent in HIV positive people, and the elderly.13

_C krusei_ is a rare but important cause of refractory vaginitis and is unique because of its intrinsic resistance to fluconazole.14

_C parapsilosis_ is an infrequent isolate on vaginal cultures; its role as a vaginal pathogen remains unstudied. Although _C parapsilosis_ is often a cause of vaginal symptoms, it seems to respond to a variety of antifungal agents and may even be a transient vaginal colonizer.15

In a majority of patients with candidal vulvovaginitis, drug therapy is convenient and effective. A small but significant group of patients remain symptomatic with recurrent, chronic candidiasis. A study of 805 patients revealed that the recurrence rate for _C tropicalis_ was twice the rate for _C albicans_, and that despite continuous medical care and multiple therapies, the recurrent _C tropicalis_ patients remained symptomatic with persistence of the organism. The difficulty encountered with eradication of _C tropicalis_ may have been due to the lack of susceptibility of the cell membrane to the commonly used antifungal agents.16

Establishing Candida species as the cause of vaginitis can be difficult because as many as 50 percent of asymptomatic women have candidal organisms as part of their endogenous vaginal flora.4
TEST PRINCIPLE/ASSAY OVERVIEW
The INFINITI CV QUAD utilizes AutoGenomics’ proprietary film-based microarray technology combined with process automation, reagent management and software technology for multiplex detection of the presence of CV pathogens in deoxyribonucleic acid (DNA) obtained from cervical specimens.

The INFINITI CV QUAD is based on the following processes:
   a) DNA extraction from endocervical and urine specimens
   b) PCR amplification of purified DNA
   c) Fluorescent label incorporation using analyte specific primer extension (ASPE)
   d) Hybridization of the labeled ASPE primers to a microarray followed by washing.
   e) Scanning of the microarray
   f) Signal detection and analysis

Steps (c) through (f) are automated by the INFINITI Analyzer and INFINITI PLUS Analyzer.

A schematic overview of the assay is shown below.

DEVICE DESCRIPTION
The INFINITI CV QUAD is an in vitro diagnostic device that consists of reagents and instrumentation which includes polymerase chain reaction (PCR) primers, microarrays, a thermal cycler, an imager, and software designed to detect the presence of the following pathogens: Candida albicans (CA), Candida glabrata (CG), Candida krusei (CK), Candida parapsilosis (CP), and Candida tropicalis (CT).

The INFINITI CV QUAD is comprised of the BioFilmChip® Microarray, the Intellipac® Reagent Module, and the PCR Amplification Mix. The instrumentation for the INFINITI CV QUAD is the AutoGenomics INFINITI Analyzer or the INFINITI PLUS Analyzer with the Qmatic™ Operating Software. The INFINITI Analyzer and the INFINITI PLUS Analyzer are CE marked.
The **BioFilmChip Microarray** consists of a polyester film coated with proprietary multi-layer components designed for DNA analysis. The layers have been designed to provide a versatile surface to enhance test performance. The INFINITI CV QUAD uses a microarray chip which has capture probes spotted on the surface of the film. Four (4) samples can be run on one microarray. Twelve (12) microarrays are housed in a magazine.

The **Intellipac Reagent Module** which acts as a communication link contains four reservoirs that house the test reagents and has an integrated memory chip. Reagent information such as lot number, expiration date, and volume usage are stored in the memory chip. The Intellipac Reagent Module communicates with the INFINITI Analyzer and provides the reagent information which appears on the assay report and printout. The Intellipac Reagent Management Module provides test reagent for 96 samples.

The **PCR Amplification Mix** consists of the reagents needed for the PCR amplification step of the assay. Each box of the PCR Amplification Mix provides 4 x 500µL vials of PCR Amplification Mix.

The **INFINITI Analyzer and INFINITI PLUS Analyzer** automate the INFINITI CV QUAD Assay and integrate all the discrete processes of sample (PCR reaction product) handling, reagent management, hybridization, detection, and results analysis. The assay is processed automatically and read by the built-in confocal microscope. Results are analyzed and presented as positive or negative for the presence of CV pathogens.

The Analyzers are provided with the Operator's Manuals. The Operator's Manual provides detailed description and operating principle of the Analyzers and instructions for use.

The INFINITI Analyzer and INFINITI PLUS Analyzer are CE marked

**WARNINGS AND PRECAUTIONS**

**Handling Requirements**
- **For in vitro diagnostic use. To be used by qualified laboratory personnel.**
- This test is to be used only with endocervical samples.
- To minimize the risk of cross contamination, sample preparation, PCR reaction set up and PCR product analysis should be performed according to approved guidelines such as CLSI (Molecular Diagnostic Methods for Genetic Diseases: Approved Guideline).
- All patient specimens are potentially hazardous and should be taken when handling materials of human origin. No test method can offer complete assurance that HCV, HIV or other infectious agents are absent.
- Clean the lab and equipment with fresh 10% bleach or equivalent to prevent contamination. Follow the CLSI Guidelines (Molecular Diagnostics Methods for Infectious Diseases; Approved Guidelines; MM3-A).
- Do not pool/mix reagents from different lots.
- Do not use a kit or reagent past its expiration date.
- Store kits and reagents according to the product label.

**Laboratory Procedures**
- Follow normal precautions for handling laboratory reagents. Do not mix reagents from different containers or from different lots.
- Follow safe laboratory procedures: do not pipette by mouth; wear protective clothing (e.g., disposable gloves laboratory coats) and eye protection; do not eat, drink or smoke in the laboratory work areas; wash hands thoroughly after handling samples and reagents.
Waste Handling
- Dispose of unused reagents, specimens and waste according to applicable country, federal, state and local regulations
- Material Safety data Sheets (MSDS) are available upon request from AutoGenomics Customer Service

Sample Preparation
- Refer to the instructions provided with the sample processing kit.
- The PCR product cannot be stored prior to loading it onto the microarray. Use immediately.

INFINITI Analyzer and INFINITI PLUS Analyzer
- Read the Operator’s Manuals before operating the instruments. Pay particular attention to “Notes”.
- Follow the Caution and Safety Warning in the Operator’s Manual.
- Refer to the Installation Requirements Section when installing the instrument.
- Refer to the Errors Section when errors are encountered while operating the instrument.
- Refer to the Help Section when problems are encountered

STORAGE / STABILITY
BioFilmChip Microarray: 12 months Refrigerated (2 to 8°C)
Intellipac Reagent: 12 months Refrigerated (2 to 8°C)
*Note*: Remove the Intellipac from the Analyzer and store refrigerated as soon as possible. Do not use after Intellipac has been opened for four weeks.
Amplification Mix: 18 months Frozen (-30°C to -15°C)

*Note*: Specific product expiration date is printed on the product label

REAGENTS REQUIRED AND PROVIDED BY AUTOGENOMICS

ASSAY REAGENTS (SUFFICIENT FOR 192 TESTS)
- Catalog Number 04-1150-02 INFINITI CV QUAD Magazine – BioFilmChip® Microarray
  4 magazines per package; 48 tests per magazine
- Catalog Number 04-2150-02 INFINITI CV QUAD Intellipac® Reagent Management Module
  2 modules per package; 96 tests per module, 4 x 1.1 mL of DPE mix which contains:
  - dNTPs
  - Labeled -dCTP
  - Analyte Specific Primers
  - Extension reaction Buffer
- Catalog Number 04-3150-02 INFINITI CV QUAD Amp Mix: 4 x 500µL vials, 48 tests per vial, of PCR reaction master mix containing
  - dNTPs
  - Multiplex Primer Mix
  - MgCl₂
  - PCR Reaction Buffer
REAGENTS REQUIRED BUT NOT PROVIDED WITH THE ASSAY REAGENTS

- AutoGenomics Catalog Number 12-0470-00 INFINITI Sample processing Kit
- Internal Control 1 Catalog Number 12-0170-00
- AutoGenomics Catalog Number 12-0020-00 Solution BF1
- AutoGenomics Catalog Number 12-0030-00 Solution BF2
- AutoGenomics Catalog Number 12-0280-00 CA DNA Template Control
- AutoGenomics Catalog Number 12-0290-00 CK DNA Template Control
- AutoGenomics Catalog Number 12-0300-00 CT DNA Template Control
- AutoGenomics Catalog Number 12-0310-00 CG DNA Template Control
- AutoGenomics Catalog Number 12-0320-00 CP DNA Template Control

- **FOR INFINITI Analyzer:** AutoGenomics Product Number 12-0020-00 Solution BF1

  OR

- **FOR INFINITI PLUS Analyzer:** Product Number 12-0330-00: Buffer Solution BF1

REAGENTS REQUIRED BUT NOT PROVIDED BY AUTOGENOMICS

- Molecular Grade Water (DNase and RNAse free)
- Platinum Taq DNA Polymerase (Invitrogen Catalog Number 10966-018)

EQUIPMENT

The following equipment is required but not provided with the assay reagents

- Pipettors
- Mini Centrifuge
- Pipette tips
- Microfuge tube Racks
- Thermocycler
- Vortex
- 0.2 ml thin wall tubes for PCR
- 1.5 ml microcentrifuge tubes
- 8-well Flat Strip Caps (Genesee Scientific, Catalog No. 22-623)
- AutoGenomics Product Number 11-0060-00: INFINITI Waste tray Stir Bars
- AutoGenomics Product Number 11-0020-00: INFINITI Waste Tray Liners
- AutoGenomics Product Number 11-0080-00: INFINITI Pipette Tips

- **FOR INFINITI Analyzer:**
  - AutoGenomics Product Number 10-0010-99: INFINITI Analyzer
  - AutoGenomics Product Number 11-0030-00: 24-Well Plates with Lids
  - AutoGenomics Product Number 11-0050-00: INFINITI Temp Cycle Plate

- **FOR INFINITI PLUS Analyzer:**
  - AutoGenomics Product Number 10-0020-99: INFINITI PLUS Analyzer
  - AutoGenomics Product Number 11-0100-00: 48-Well Plates and Product Number 11-0110-00: 48 Well Plate Lid
ASSAY PROCEDURE

Specimen Processing
It is recommended that the INFINITI Sample Processing Kit (Catalog Number 12-0470-00) be used for sample processing. Follow the instructions provided with the processing kit.

Recommended Controls
It is recommended that positive controls and a no template control (i.e. molecular grade water) are included in each test run. The no template control serves as a contamination control. If this control is positive, then samples should be tested again taking appropriate measures to prevent contamination.

The following positive controls, available from AutoGenomics, are recommended for use with the INFINITI CV QUAD (refer to section on REAGENTS REQUIRED for Catalog Number)

(a) CA DNA Template Control
(b) CK DNA Template Control
(c) CT DNA Template Control
(d) CG DNA Template Control
(e) CP DNA Template Control

Note: Please use proper PCR technique to prevent contamination of reagents with positive controls.
Sealing the 24WP containing sample DNA and "no template control" samples with caps before adding the positive controls is recommended to prevent cross contamination.

Amplification Reaction

Note:
- Keep Taq DNA polymerase on ice.
- Completely thaw reagents at room temperature then immediately place on ice.
- Vortex the amplification mix for 2 to 5 seconds then centrifuge briefly to bring the contents to the bottom of the tube.
- To avoid potential contamination, a separate area is recommended for assembly of the PCR reaction. Decontaminate pipettes and all work surfaces with freshly prepared 10% bleach.
- Filter tips and gloves must be used when handling samples and controls.
- Make sure there is no abnormal evaporation of the PCR product. After PCR is complete, visually inspect for any volume change. All amplification reaction volumes should be about 15 µL. Otherwise, do not proceed with the assay.

Note:
- For the INFINITI Analyzer use the 24WP.
- For the INFINITI PLUS Analyzer use the 48WP.

1. Prepare the PCR master mix
   Amplification mix 9.75 µL
   Platinum Taq polymerase 0.25 µL
   Internal Control 1 1.00 µL
   
   Total volume of PCR master mix 11.0 µL

Note: Calculate the amount of each reagent needed based on the number of reactions.
2. Gently vortex the PCR master mix then dispense 11.0 µL of master mix into wells of the well plate.

3. Add 4.0 µL of sample or control DNA to each well
   
<table>
<thead>
<tr>
<th>Component</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR master mix</td>
<td>11.0 µL</td>
</tr>
<tr>
<td>Sample</td>
<td>4.0 µL</td>
</tr>
</tbody>
</table>

   Total volume of amplification reaction 15.0 µL

   **Note:** This is a QUAD assay. When loading samples, always load the samples in multiples of four and in consecutive order. For example, if loading 8 samples, load wells A1 to A8. Do not load the B wells.

4. Place the well plate, sealed with 8-well flat strip caps, in a thermocycler and immediately commence the amplification reaction using the following program:

<table>
<thead>
<tr>
<th>Step No.</th>
<th>Temperature °C</th>
<th>Time (sec)</th>
<th>No. of Cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>94</td>
<td>120</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>94</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>63-55 (-0.8/cycle)</td>
<td>40</td>
<td>10x</td>
</tr>
<tr>
<td>3</td>
<td>94</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>40</td>
<td>30x</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>hold</td>
<td>1</td>
</tr>
</tbody>
</table>

   **Note:** After each cycle in step 2, the temperature is decreased by 0.8°C. When an Eppendorf Mastercycler EP was used with the ramp rate set at 75%, the total cycling time was one (1) hour and 44 minutes (± 5 min). If using other thermocycler models, we recommend adjusting the ramp rate in order to obtain an equivalent total cycling time.

**Sample Loading**

1) Carefully remove the 8-well flat strip caps to avoid splashing.

2) Load the well plate in the appropriate orientation (with well A1 in the back left corner) into the Analyzer
   - **INFINITI Analyzer:** Load the assembled 24WP with the associated lid (Catalog # 11-0030-00).
   - **INFINITI PLUS Analyzer:** Load the assembled 48WP with a clean 48WP lid (see instructions in the INFINITI PLUS Analyzer Operator’s Manual) (Catalog # 11-0110-00, reusable).

3) Load the following: assay specific magazines, Intellipac, INFINITI Static Free Pipette tips, and buffer.
   - **FOR INFINITI Analyzer:**
     Buffer Solution 1 and 2 should be placed in the INFINITI bottle holders. Buffer Solution 1 goes in the left holder (near the magazine) and Buffer Solution 2 in the right holder (near the Intellipac).
   - **FOR INFINITI PLUS Analyzer:**
     Buffer Solution 2 should be placed in the INFINITI bottle holders. Buffer Solution 2 goes in the right holder (near the Intellipac).
Operation of the Analyzers
Follow the instructions in the Operator’s Manuals
INFINITI Analyzer Operator’s Manual (Part Number EM-34000)
INFINITI PLUS Analyzer Operator’s Manual (Part Number EM-34041)

QUALITY CONTROL
- Maintain calibration of thermocycler according to manufacturer’s specifications.
- Maintain calibration of INFINITI or INFINITI PLUS Analyzer according to AutoGenomics’ specifications.
- Maintain calibration of pipettes according to manufacturer’s specifications.

LIMITATIONS
The results obtained from the INFINITI CV QUAD should be used and interpreted only in the context of the overall clinical diagnosis. AutoGenomics is not responsible for any clinical decisions that are made.

INTERPRETATION OF RESULTS
Results from the INFINITI CV QUAD are reported to the user as "Positive" or "Negative" for the presence of pathogens detected.

The Internal Control is intended to identify specimens that contain polymerase inhibitors. INFINITI CV QUAD results are interpreted as follows:

<table>
<thead>
<tr>
<th>Analyte Result</th>
<th>Internal Control (IC) Result</th>
<th>INTERPRETATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Analytes Negative</td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td>All Analytes Negative</td>
<td>Negative</td>
<td>Invalid Test Result</td>
</tr>
<tr>
<td>Any Analyte Positive</td>
<td>Positive or Negative</td>
<td>Valid Test Result</td>
</tr>
</tbody>
</table>

If the analyzer detects a problem or an error (e.g., assay parameters not met), no results will be reported. Instead, a description of the problem or error code will be displayed. The Trouble Shooting section of the INFINITI Analyzer Operator’s Manual provides an explanation of the errors. The assay needs to be repeated.

DISPOSAL
Waste materials for the INFINITI CV QUAD are common waste materials generated in clinical laboratories, and should be handled/disposed of in accordance with the policies/procedures in place in the clinical laboratory.

PERFORMANCE CHARACTERISTICS
Analytical Specificity
Studies related to specificity were conducted during assay development. PCR primer specificity was determined by amplicon size on a gel and sequencing the amplicon. ASP primer specificity was determined by the correct calls made by the assay using known genomic samples. Capture probe specificity was determined by hybridizing different oligos and demonstrating that correct oligo hybridizes to the known spot.
Analytical Specificity/Cross-Reactivity study demonstrated no cross-reactivity of the INFINITI CV QUAD with the following microbial DNA.

<table>
<thead>
<tr>
<th>Escherichia coli</th>
<th>Streptococcus agalactiae</th>
<th>Bacteroides uniformis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klebsiella pneumoniae</td>
<td>Enterococcus (Streptococcus) faecalis</td>
<td>Fusobacterium nucleatum</td>
</tr>
<tr>
<td>Pseudomonas aeruginosa</td>
<td>Streptococcus pyogenes</td>
<td>Candida albicans</td>
</tr>
<tr>
<td>Haemophilus influenzae</td>
<td>Staphylococcus aureus</td>
<td>Enterococcus cassioflavus</td>
</tr>
<tr>
<td>Proteus vulgaris</td>
<td>Staphylococcus epidermidis</td>
<td>Candida parapsilosis</td>
</tr>
<tr>
<td>Enterobacter cloacae</td>
<td>Corynebacterium striatum</td>
<td>Candida tropicalis</td>
</tr>
<tr>
<td>Acinetobacter baumannii</td>
<td>Peptostreptococcus anaerobis</td>
<td>Candida krusei</td>
</tr>
<tr>
<td>Moraxella (Branhamella) catarrhalis</td>
<td>Clostridium sordelli</td>
<td>Candida glabrata</td>
</tr>
<tr>
<td>Neisseria meningitidis</td>
<td>Clostridium difficile</td>
<td>Lactobacillus jensenii</td>
</tr>
<tr>
<td>Neisseria gonorrhoeae</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Analytical Sensitivity (Level of Detection)**

Analytical sensitivity studies performed using plasmid samples established the limit of detection (copies/test) of the INFINITI CV QUAD. The limit of detection is the lowest concentration of DNA that gives all correct calls. Analytical sensitivity studies were performed using plasmid samples to establish the limit of detection (copies/test) of the INFINITI CV QUAD. The limit of detection is the lowest concentration of DNA that gives all correct calls. The study established the lower limit of detection for Bacteroides fragilis (BF) and Mobiluncus mulieris (MM) as 200 copies/test, for Atopobium vaginae (AV) 100 copies/test, for Mobiluncus curtisi (MC) 20 copies/test, and for Gardnerella vaginalis (GV) and Prevotella bivia (PB) 10 copies/test. The upper limit of detection was determined to be above $2 \times 10^5$ copies/test. The INFINITI CV QUAD operating sample volume range is from 5 to 9μL. The sample volume range is the upper and lower sample volume limits where the INFINITI CV QUAD gave all correct calls.

**Sample Carry-over**

Sample carryover studies using plasmid samples demonstrated that there is no sample carry-over with the INFINITI CV QUAD. BF, AV, MC, MM, GV, and PB Plasmid DNA samples and TE/Salmon testes buffer were run alternatively to determine if one sample will carry over to the next. No carry-over contamination was observed.

**Potential Interference from Blood and other Substances**

A substance interference study was performed to determine if the INFINITI CV QUAD will be affected by the presence of products commonly used in the vaginal tract.

Chemical substances that did not interfere with the assay at a concentration of 5% were vaginal cream, vaginal ointment, douche, and contraceptive gel were used to spike plasmid samples (at concentration typically found in the vaginal tract) before testing with the INFINITI CV QUAD.

Whole blood at a concentration of 5% did not interfere with BF, GV, AV or PB; however it did interfere with MM and MC. The addition of whole blood reduced the signals of MM and MC by 97% and 98.6% respectively.

Since whole blood was shown to significantly interfere with the MM and MC, bloody specimens may interfere with assay performance.
Precision and Reproducibility

Precision and reproducibility of the INFINITI CV QUAD was evaluated using plasmid DNA controls at the LOD performed by QC during performance testing for release. The reproducibility study was designed to determine the following:

- Reproducibility of three lots of INFINITI CV QUAD for each analyte (BF, AV, MC, MM, GV, and PB).
- Reproducibility of the INFINITI CV QUAD with three INFINITI Analyzers

All calls were correct. This demonstrated reproducibility of the INFINITI CV QUAD, using three instruments.

Clinical Validation Studies

Clinical Comparison Studies of the INFINITI CV QUAD was conducted using twenty-seven previously characterized clinical samples with 6 possible results per sample (positive or negative calls for 6 pathogens). Each sample was tested independently at 2 sites (i.e., 2 operators & 2 INFINITI Analyzers) for a total of 54 tests.

Table 1: Summary of Comparison Data for Pathogen calls for INFINITI CV QUAD.

<table>
<thead>
<tr>
<th>% correct pathogen calls</th>
<th>Site 1 (N=27)</th>
<th>Site 2 (N=27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.6%</td>
<td>95.1%</td>
<td></td>
</tr>
<tr>
<td>150/162</td>
<td>154/162</td>
<td></td>
</tr>
<tr>
<td>Overall % correct pathogen calls</td>
<td>93.8%</td>
<td>304/324</td>
</tr>
</tbody>
</table>

Table 2: Sensitivity and Specificity for INFINITI CV QUAD.

<table>
<thead>
<tr>
<th>N=54 tests</th>
<th>BF</th>
<th>GV</th>
<th>MM</th>
<th>MC*</th>
<th>AV**</th>
<th>PB***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>67%</td>
<td>8%</td>
<td>100%</td>
</tr>
<tr>
<td>Specificity</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>87%</td>
</tr>
<tr>
<td>Positive Predictive Value</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>22%</td>
</tr>
<tr>
<td>Negative Predictive Value</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>96%</td>
<td>79%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Sensitivity of the INFINITI CV QUAD may be less than the comparator method for MC.

**The INFINITI CV QUAD does not detect all AV strains that are detectable by 16S rRNA PCR. The INFINITI assay detects type specific AV (GenBank DSM15829; ATCC strain BAA-55).

***The INFINITI assay may be more sensitive for PB than the comparator method. The analysis of AGI's INFINITI data for PB showed the signals were low, near the limit of detection. This could indicate low amount of microorganism in the sample which were not picked up using the comparator method.
REFERENCES