

SmartChip™ Bacterial Vaginosis Panel

Greater Sample Throughput and Increased Sensitivity

Fast and Cost Effective Microbial Identification

SENSITIVE AND SPECIFIC – Reliably detects as few as 10–500 target copies/μl

EASY AUTOMATED WORKFLOW – 30 minutes of hands-on time for 144 samples against 22 assays

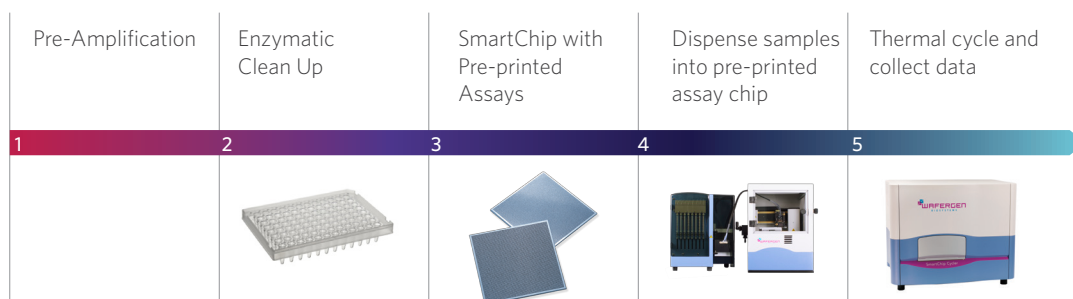
COST EFFECTIVE – Faster microbial identification at lower costs

Quick and accurate identification of the microorganisms present in Bacterial Vaginosis (BV) samples is essential for women's health research laboratories as BV affects over 21.2 million women in the United States. While the specific cause or causes of BV are unknown, identifying the microorganisms in samples can lead to a deeper understanding of the disease. The Bacterial Vaginosis Panel from Wafergen Biosystems identifies 19 different pathogens (Table 1) through quantitative PCR (qPCR) analysis on the SmartChip Real-Time PCR System (Figure 1).

Fast and Easy Automated Microbial Detection

The SmartChip Real-Time PCR System utilizes pre-printed SmartChips and automated sample dispensing on the MultiSample NanoDispenser (MSND) to simplify reaction set up and data collection on the SmartChip Real-Time PCR System.

FIGURE 1. Bacterial Vaginosis Panel workflow on the SmartChip Real-Time PCR System.



BV PANEL TARGETS

Atopobium vaginae	Mobiluncus curtisii
Bacteriodes fragilis	Mobiluncus mulieris
Candida albicans	Mycoplasma genitalium
Candida glabrata	Mycoplasma hominis
Candida krusei	Neisseria gonorrhoeae
Candida parapsilosis	Prevotella bivia
Candida tropicalis	Trichomonas vaginalis
Chlamydia trachomatis	Ureaplasma urealyticum
Gardnerella vaginalis	Human albumin
HSV1	RNaseP
HSV2	β-globulin

TABLE 1. The Bacterial Vaginosis Panel identifies 19 microorganisms covering bacterial, yeast, protozoan, fungal and viral pathogens and includes three internal positive controls.

Automated sample dispensing with the MSND into pre-printed chips requires just 40 minutes and decreases hands-on time and variation due to human error. After the samples have been pre-amplified, the SmartChip Real-Time PCR System automated workflow allows researchers to analyze 144 samples across 22 assays with just 30 minutes of hands-on time in 6 hours of total run time. You can analyze up to 432 samples in a single day with the BV Panel on the SmartChip Real-Time PCR System.

Sensitive Microbial Detection at Lower Cost

Microbial detection with the Bacterial Vaginosis Panel on the SmartChip Real-Time PCR System uses 100nl SmartVolumes to decrease your reagent costs, compared to 10µl reactions in plates, while maintaining accuracy and sensitivity. The dynamic range and efficiency of the BV panel was assessed by evaluating 10-fold dilutions from 10 to 1,000,000. Figure 2 shows the efficiency of the *G. vaginalis* assay and demonstrates efficient amplification over a linear dynamic range of 6 logs of concentration.

To assess sensitivity and detection limits, samples ranging from 500 to 10 copy numbers of target per microliter of sample were analyzed with the BV panel. Figure 3 demonstrates efficient linear amplification from samples containing 500 to 10 copies of target per microliter; suggesting that the BV Panel can reliably and reproducibly detect as few as 10 pathogen copies per microliter. The actual Ct values and statistical analysis of the replicates in the sensitivity experiment in Table 2 also demonstrate correlation between copy number and Ct value as well as low variation between replicates suggesting that the BV panel is reliable and sensitive at low copy number concentrations with little variation.

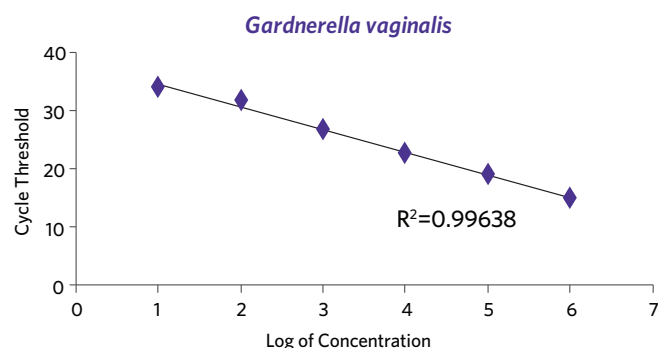


FIGURE 2. Example BV panel assay detecting *G. vaginalis*, a microbe implicated in BV infections, that exhibits efficient linear detection over a dynamic range of 6 logs of concentration.

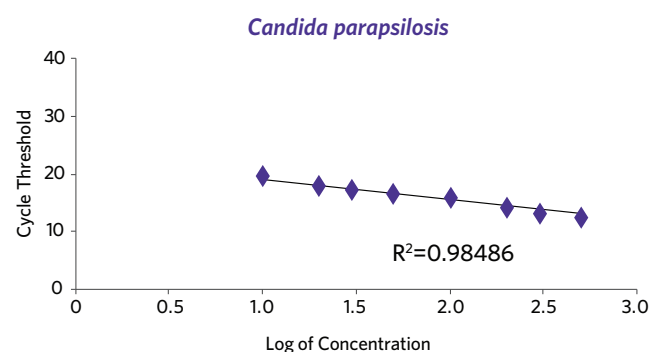


FIGURE 3. Example assay detecting *Candida parapsilosis* demonstrating accurate linear detection between 10-500 copies.

Sample	Concentration Input Material (C/uL)	Ct	CtSD
<i>Candida parapsilosis</i>	10	19.08	0.34
<i>Candida parapsilosis</i>	20	17.71	0.07
<i>Candida parapsilosis</i>	30	17.10	0.05
<i>Candida parapsilosis</i>	50	16.42	0.07
<i>Candida parapsilosis</i>	100	15.97	0.04
<i>Candida parapsilosis</i>	200	14.51	0.20
<i>Candida parapsilosis</i>	300	13.46	0.10
<i>Candida parapsilosis</i>	500	12.98	0.16

TABLE 2. Sample copy number and Ct values plotted with Ct standard deviation demonstrating tight correlation between copy number and Ct values as well as little variation amongst replicate assays.

For Research Use Only. Not for use in diagnostic procedures.

© Copyright 2016, WaferGen Biosystems. All rights reserved. Information in this document is subject to change without notice. WaferGen Biosystems assumes no responsibility for any errors that may appear in this document. WaferGen, WaferGen Biosystems (Design), and WaferGen Biosystems are trademarks of WaferGen Biosystems or its subsidiaries in the U.S. and/or certain other countries. All other trademarks are the sole property of their respective owners.

430-000 262 D6 070816-1