

# NOTICIAS

## Nuevas herramientas de diagnóstico mediante RealTime PCR: Microbial DNA qPCR

QIAGEN presenta al mercado la colección más completa de ensayos, kits y arrays para la detección y cuantificación relativa de cualquier microorganismo, gen de resistencia o de virulencia mediante RealTime PCR.

Se trata de más de 500 ensayos o kits diferentes, y sus posibles combinaciones en kits multi-ensayo (3-6 ensayos) o en placas o PCRArrays (6-90 ensayos) con sus controles apropiados. Además, su uso está validado experimentalmente en cualquier plataforma de RealTime PCR.

La diferencia entre los ensayos (Assays) y los kits (Assays Kits) es que los ensayos contienen los primers y sonda específicos del ensayo y la mezcla de amplificación. Los kits incluyen además, un control positivo del DNA diana, un control interno de PCR y el agua libre de DNA de bacterias.

Los kits multiensayo "Multi-Assays" contienen varios ensayos relacionados, ya sean de varias bacterias, hongos o sus genes de resistencia o virulencia, con sus controles positivos, control interno, agua libre de DNA de bacterias y la mezcla de amplificación necesaria.

Tabla 1

>300	Ensayos de Identificación de bacterias
8	Ensayos de Identificación de levaduras
1	Ensayo de Identificación de protista
87	Ensayos de genes resistencia a antibióticos
87	Ensayos de genes de factores de virulencia

Línea de productos Microbial DNA qPCR Assays.

Tabla 2

Food testing: Poultry	BAID-1101Z
Food testing: Seafood	BAID-1102Z
Food testing: Vegetable	BAID-1103Z
Biodefense	BAID-1201Z
Food testing: Meat	BAID-1202Z
Urinary Tract Infections	BAID-1205Z
Bacterial Vaginosis	BAID-1401Z
Food testing: Dairy	BAID-1402Z
Intestinal Infections	BAID-1403Z
Respiratory Infections	BAID-1404Z
Water Analysis	BAID-1405Z
Antibiotic Resistance Genes	BAID-1901Z
Vaginal Flora	BAID-1902Z
Sepsis	BAID-1903Z

*Microbial DNA qPCR Arrays prediseñados. Puede solicitar la información del panel de ensayos que contiene cada qPCR Array.*

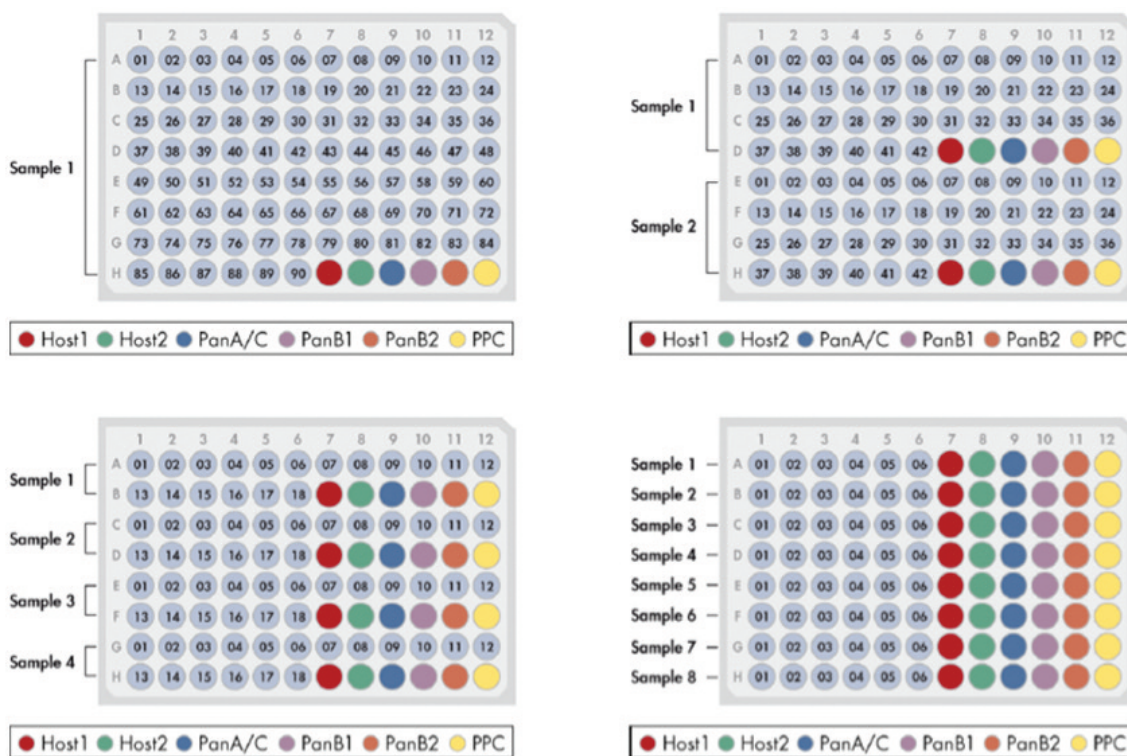


Figura 1. Distintas configuraciones de posibles Microbial DNA PCR Arrays. Los pocillos numerados contienen los ensayos específicos elegidos a demanda. Los pocillos coloreados contienen todos los controles necesarios para la validación completa del experimento. El software de análisis específico para cada qPCR Array es gratuito.

Si necesita detectar múltiples patógenos de una misma muestra, podemos diseñar un PCR Array específico que contenga de 6 a 90 ensayos específicos y todos los controles necesarios, tal como se indica en la figura 1. Junto con las placas se suministra la mezcla de amplificación y de forma gratuita el software de análisis. Existen 14 PCR Arrays ya diseñados, con los paneles de ensayos relacionados apropiados, vea la tabla 2.

Todos los ensayos “Microbial DNA qPCR Assays” han sido validados en eficiencia y sensibilidad, especificidad, linealidad y reproducibilidad.

### EFICIENCIA Y SENSIBILIDAD

La sensibilidad de un ensayo puede determinarse mediante el cálculo del LOD o límite de detección, que sería un parámetro similar al de unidades formadoras de

colonias. El cálculo del LLOQ, o límite inferior de cuantificación, corresponde al límite inferior de analito que puede diferenciarse de otra muestra con una cantidad diferente del mismo analito. Este

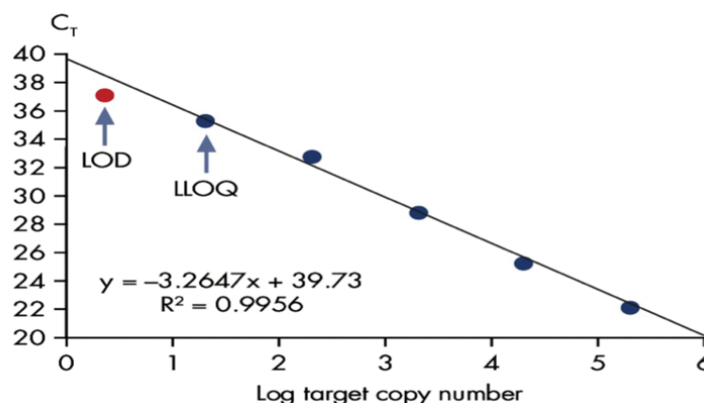


Figura 2. Límite de detección (Limit of detection, LOD) versus Límite inferior de cuantificación (lower limit of quantification, LLOQ)

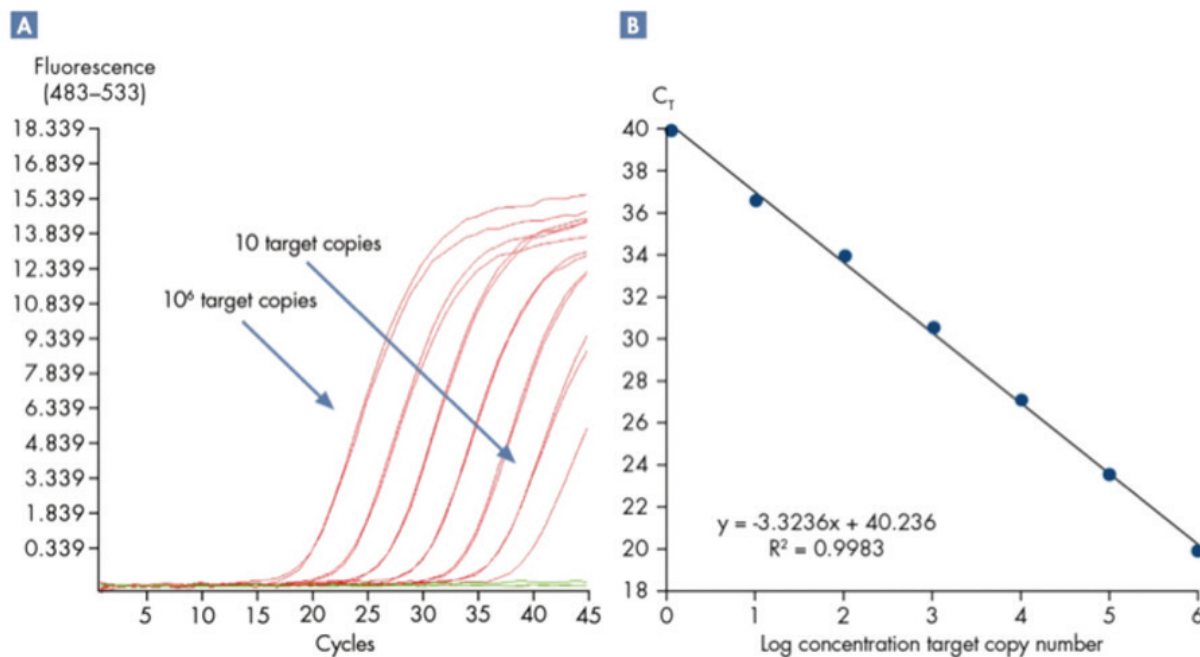


Figura 3, Validación de un ensayo Microbial DNA qPCR Assay mediante diluciones seriadas del DNA diana para el cálculo de la eficiencia y la sensibilidad.

parámetro es importante para la cuantificación, pero no para la detección cualitativa. Se ha relacionado el LLOQ con el número de copias de un gen, ya que hay colonias que podrían tener múltiples copias de un gen.

El 92% de todos los ensayos Microbial DNA qPCR Assays de identificación tienen un LLOQ de <100 copias, así como el 97% de los ensayos de resistencia a antibióticos y el 95% de los ensayos de virulencia.

La figura 2 muestra la diferencia entre el límite de detección (LOD) y el límite inferior de cuantificación (LLOQ). El LOD se define como la concentración más baja a la que el 95% de las muestras se detectan positivas, mientras que el LLOQ es la menor concentración que cae dentro del rango de la linealidad en la curva estándar, y por lo tanto que podemos cuantificar con precisión.

### ESPECIFICIDAD

Los ensayos o kits "Microbial DNA qPCR Assays" son de una elevada especificidad.

Para determinar la especificidad de estos kits, cada ensayo se probó contra 119 muestras de DNA de diferentes bacterias y hongos, mezclados de diez en diez. Cada ensayo o kit detecta un solo gen, o una única especie. Esta especificidad se mantiene cuando se trata de muestras complejas, como esputo o heces, y se ha verificado mediante pirosecuenciación.

### LINEARIDAD y RANGO DINÁMICO

Los ensayos o kits "Microbial DNA qPCR Assays" amplifican de forma lineal en un rango entre 10 y  $10^6$  copias de DNA molde. Además tienen probada REPRODUCIBILIDAD tanto interensayo como intraensayo.

Por todo ello, si desea recibir el listado completo de los kits disponibles, o una información más detallada de estos ensayos, o paneles, puede contactar a nuestra dirección de consultas:

[consultasbiotec@izasa.es](mailto:consultasbiotec@izasa.es)

## Microbial DNA qPCR Assays/Assay Kits

Product list, August 23, 2013

### Overview

QIAGEN's Microbial DNA qPCR Assays and Assay Kits are highly sensitive molecular analysis research tools designed to test for the presence of over 500 bacterial, fungal, antibiotic resistance, or virulence factor genes. Microbial DNA qPCR Assays screen for extremely low levels of microorganisms or their genes in metagenomic samples and achieve results in 3 hours with minimal hands-on time. Microbial DNA qPCR Assays are a mix of 1 PCR primers and one 5'-hydrolysis probe that enables quantitative real-time PCR. Microbial DNA qPCR Assays are designed by a proprietary algorithm and wet-bench verified.

Microbial DNA qPCR Assay Kits (BBXX#####A) provide a complete solution for real-time PCR-based microbial detection. Microbial DNA qPCR Assay Kits contain a Microbial DNA qPCR Assay, Microbial DNA Positive Control, Positive PCR Control, Microbial DNA-Free Water, and Microbial qPCR Mastermix — everything required for a successful qPCR run. Each assay kit supplies enough material to perform twenty 25 µl reactions.

Microbial DNA qPCR Assays (BPXX#####A) contain only the 2 PCR primers and hydrolysis probe and the accompanying mastermix that enables quantitative real-time PCR. However, each assay supplies enough material to perform one hundred 25 µl reactions.

The following list details:

- Bacterial identification assays on pages 1–20
- Fungal identification assays on page 21
- Protist identification assays on page 21
- Antibiotic resistance gene identification assays on pages 22–27
- Virulence factor gene identification assays on pages 27–32
- Control assays on page 32

### Bacterial identification assays

Bacterium	Assay catalog number	Assay kit catalog number
<i>Abiotrophia defectiva</i>	BPID00001A	BBID00001A
<i>Achromobacter xylosoxidans</i>	BPID00002A	BBID00002A
<i>Acidaminococcus fermentans</i>	BPID00003A	BBID00003A



# Bacterial identification assays

<i>Acinetobacter baumannii</i>	BPID00004A	BBID00004A
<i>Acinetobacter spp.</i>	BPID00005A	BBID00005A
<i>Acinetobacter haemolyticus</i>	BPID00006A	BBID00006A
<i>Actinobacillus hominis</i>	BPID00007A	BBID00007A
<i>Actinomyces europaeus</i>	BPID00008A	BBID00008A
<i>Actinomyces gerencseriae</i>	BPID00009A	BBID00009A
<i>Actinomyces graevenitzi</i>	BPID00010A	BBID00010A
<i>Actinomyces israelii</i>	BPID00011A	BBID00011A
<i>Actinomyces lingnae</i>	BPID00012A	BBID00012A
<i>Actinomyces naeslundii</i>	BPID00013A	BBID00013A
<i>Actinomyces odontolyticus</i>	BPID00014A	BBID00014A
<i>Actinomyces radingae</i>	BPID00015A	BBID00015A
<i>Actinomyces urogenitalis</i>	BPID00017A	BBID00017A
<i>Actinomyces viscosus</i>	BPID00018A	BBID00018A
<i>Aerococcus christensenii</i>	BPID00019A	BBID00019A
<i>Aerococcus urinae</i>	BPID00020A	BBID00020A
<i>Aerococcus viridans</i>	BPID00021A	BBID00021A
<i>Aeromonas spp. 1</i>	BPID00022A	BBID00022A

# Bacterial identification assays

<i>Aeromonas spp. 2</i>	BPID00023A	BBID00023A
<i>Aggregatibacter actinomycetemcomitans</i>	BPID00024A	BBID00024A
<i>Aggregatibacter segnis</i>	BPID00025A	BBID00025A
<i>Akkermansia muciniphila</i>	BPID00026A	BBID00026A
<i>Alcaligenes faecalis</i>	BPID00027A	BBID00027A
<i>Alistipes putredinis</i>	BPID00028A	BBID00028A
<i>Anaerococcus hydrogenalis</i>	BPID00029A	BBID00029A
<i>Anaerococcus lactolyticus</i>	BPID00030A	BBID00030A
<i>Anaerococcus prevotii</i>	BPID00031A	BBID00031A
<i>Anaeroglobus geminatus</i>	BPID00032A	BBID00032A
<i>Anaerostipes caccae</i>	BPID00033A	BBID00033A
<i>Anaerotruncus colihominis</i>	BPID00034A	BBID00034A
<i>Arcobacter butzleri</i>	BPID00035A	BBID00035A
<i>Arcobacter skirrowii</i>	BPID00036A	BBID00036A
<i>Atopobium parvulum</i>	BPID00039A	BBID00039A
<i>Atopobium rimae</i>	BPID00040A	BBID00040A
<i>Atopobium vaginae</i>	BPID00041A	BBID00041A
<i>Bacillus anthracis</i>	BPID00042A	BBID00042A

# Bacterial identification assays

<i>Bacillus spp. 1</i>	BPID00043A	BBID00043A
<i>Bacillus spp. 2</i>	BPID00044A	BBID00044A
<i>Bacillus spp. 3</i>	BPID00045A	BBID00045A
<i>Bacteroides caccae</i>	BPID00046A	BBID00046A
<i>Bacteroides coprocola</i>	BPID00047A	BBID00047A
<i>Bacteroides coprophilus</i>	BPID00048A	BBID00048A
<i>Bacteroides dorei</i>	BPID00049A	BBID00049A
<i>Bacteroides eggerthii</i>	BPID00050A	BBID00050A
<i>Bacteroides fragilis</i>	BPID00051A	BBID00051A
<i>Bacteroides intestinalis</i>	BPID00052A	BBID00052A
<i>Bacteroides ovatus</i>	BPID00053A	BBID00053A
<i>Bacteroides pectinophilus</i>	BPID00054A	BBID00054A
<i>Bacteroides plebeius</i>	BPID00055A	BBID00055A
<i>Bacteroides sp. 2_2_4</i>	BPID00057A	BBID00057A
<i>Bacteroides sp. 4_3_47FAA</i>	BPID00058A	BBID00058A
<i>Bacteroides stercoris</i>	BPID00059A	BBID00059A
<i>Bacteroides thetaiotaomicron</i>	BPID00060A	BBID00060A
<i>Bacteroides ureolyticus</i>	BPID00061A	BBID00061A

# Bacterial identification assays

<i>Bacteroides vulgatus</i>	BPID00062A	BBID00062A
<i>Bifidobacterium adolescentis</i>	BPID00063A	BBID00063A
<i>Bifidobacterium bifidum</i>	BPID00064A	BBID00064A
<i>Bifidobacterium breve</i>	BPID00065A	BBID00065A
<i>Bifidobacterium dentium</i>	BPID00066A	BBID00066A
<i>Bifidobacterium longum</i>	BPID00067A	BBID00067A
<i>Bifidobacterium pseudocatenulatum</i>	BPID00068A	BBID00068A
<i>Bifidobacterium scardovii</i>	BPID00069A	BBID00069A
<i>Blautia hydrogenotrophica</i>	BPID00070A	BBID00070A
<i>Bordetella spp.</i>	BPID00071A	BBID00071A
<i>Brevibacillus agri</i>	BPID00072A	BBID00072A
<i>Brevibacillus brevis</i>	BPID00073A	BBID00073A
<i>Brevibacterium casei</i>	BPID00074A	BBID00074A
<i>Brevundimonas diminuta</i>	BPID00075A	BBID00075A
<i>Brevundimonas vesicularis</i>	BPID00076A	BBID00076A
<i>Burkholderia spp. 1</i>	BPID00077A	BBID00077A
<i>Burkholderia gladioli</i>	BPID00078A	BBID00078A
<i>Burkholderia spp. 2</i>	BPID00079A	BBID00079A



# Bacterial identification assays

<i>Butyricoccus pullicaecorum</i>	BPID00080A	BBID00080A
<i>Butyrivibrio crossotus</i>	BPID00081A	BBID00081A
<i>Butyrivibrio fibrisolvens</i>	BPID00082A	BBID00082A
<i>Campylobacter spp. 1</i>	BPID00083A	BBID00083A
<i>Campylobacter concisus</i>	BPID00084A	BBID00084A
<i>Campylobacter fetus</i>	BPID00085A	BBID00085A
<i>Campylobacter gracilis</i>	BPID00086A	BBID00086A
<i>Campylobacter spp. 2</i>	BPID00087A	BBID00087A
<i>Campylobacter rectus</i>	BPID00088A	BBID00088A
<i>Campylobacter showae</i>	BPID00089A	BBID00089A
<i>Campylobacter sputorum</i>	BPID00090A	BBID00090A
<i>Campylobacter upsaliensis</i>	BPID00091A	BBID00091A
<i>Capnocytophaga gingivalis</i>	BPID00097A	BBID00097A
<i>Capnocytophaga granulosa</i>	BPID00098A	BBID00098A
<i>Capnocytophaga ochracea</i>	BPID00099A	BBID00099A
<i>Capnocytophaga sputigena</i>	BPID00100A	BBID00100A
<i>Cardiobacterium hominis</i>	BPID00101A	BBID00101A
<i>Catellibacterium marimammalium</i>	BPID00102A	BBID00102A

# Bacterial identification assays

<i>Catenibacterium mitsuokai</i>	BPID00103A	BBID00103A
<i>Catonella morbi</i>	BPID00104A	BBID00104A
<i>Chlamydia trachomatis</i>	BPID00105A	BBID00105A
<i>Chlamydophila pneumoniae</i>	BPID00106A	BBID00106A
<i>Chlamydophila psittaci</i>	BPID00107A	BBID00107A
<i>Citrobacter freundii</i>	BPID00108A	BBID00108A
<i>Citrobacter youngae</i>	BPID00109A	BBID00109A
<i>Clostridium difficile</i>	BPID00110A	BBID00110A
<i>Clostridium nexile</i>	BPID00111A	BBID00111A
<i>Clostridium perfringens</i>	BPID00112A	BBID00112A
<i>Clostridium septicum</i>	BPID00113A	BBID00113A
<i>Clostridium sordellii</i>	BPID00114A	BBID00114A
<i>Clostridium sp. M62/1</i>	BPID00115A	BBID00115A
<i>Clostridium sp. SS2/1</i>	BPID00116A	BBID00116A
<i>Clostridium tetani</i>	BPID00117A	BBID00117A
<i>Collinsella aerofaciens</i>	BPID00118A	BBID00118A
<i>Coprococcus comes</i>	BPID00119A	BBID00119A
<i>Coprococcus eutactus</i>	BPID00120A	BBID00120A

# Bacterial identification assays

<i>Corynebacterium aurimucosum</i>	BPID00121A	BBID00121A
<i>Corynebacterium diphtheriae</i>	BPID00122A	BBID00122A
<i>Corynebacterium durum</i>	BPID00123A	BBID00123A
<i>Corynebacterium matruchotii</i>	BPID00124A	BBID00124A
<i>Corynebacterium pseudodiphtheriticum</i>	BPID00125A	BBID00125A
<i>Coxiella burnetii</i>	BPID00126A	BBID00126A
<i>Desulfovibrio desulfuricans</i>	BPID00127A	BBID00127A
<i>Desulfovibrio piger</i>	BPID00128A	BBID00128A
<i>Desulfovibrio vulgaris</i>	BPID00129A	BBID00129A
<i>Dialister invisus</i>	BPID00130A	BBID00130A
<i>Dialister pneumosintes</i>	BPID00131A	BBID00131A
<i>Dorea formicigenerans</i>	BPID00132A	BBID00132A
<i>Eggerthella sinensis</i>	BPID00134A	BBID00134A
<i>Ehrlichia canis</i>	BPID00135A	BBID00135A
<i>Eikenella corrodens</i>	BPID00136A	BBID00136A
<i>Elizabethkingia meningoseptica</i>	BPID00137A	BBID00137A
<i>Enterobacter/Klebsiella spp.</i>	BPID00139A	BBID00139A
<i>Enterococcus spp.</i>	BPID00141A	BBID00141A

# Bacterial identification assays

<i>Enterococcus faecalis</i>	BPID00142A	BBID00142A
<i>Enterococcus faecium</i>	BPID00143A	BBID00143A
<i>Enterococcus italicus</i>	BPID00144A	BBID00144A
<i>Erysipelothrix rhusiopathiae</i>	BPID00145A	BBID00145A
<i>Escherichia/Shigella spp.</i>	BPID00146A	BBID00146A
<i>Eubacterium hallii</i>	BPID00147A	BBID00147A
<i>Eubacterium infirmum</i>	BPID00148A	BBID00148A
<i>Eubacterium rectale</i>	BPID00149A	BBID00149A
<i>Eubacterium saburreum</i>	BPID00150A	BBID00150A
<i>Eubacterium siraeum</i>	BPID00151A	BBID00151A
<i>Eubacterium ventriosum</i>	BPID00152A	BBID00152A
<i>Exiguobacterium aurantiacum</i>	BPID00153A	BBID00153A
<i>Faecalibacterium prausnitzii</i>	BPID00154A	BBID00154A
<i>Filifactor alocis</i>	BPID00155A	BBID00155A
<i>Fingoldia magna</i>	BPID00156A	BBID00156A
<i>Francisella spp.</i>	BPID00157A	BBID00157A
<i>Fusobacterium mortiferum</i>	BPID00158A	BBID00158A
<i>Fusobacterium necrophorum</i>	BPID00159A	BBID00159A

# Bacterial identification assays

<i>Fusobacterium nucleatum</i>	BPID00160A	BBID00160A
<i>Fusobacterium periodonticum</i>	BPID00161A	BBID00161A
<i>Fusobacterium varium</i>	BPID00162A	BBID00162A
<i>Gardnerella vaginalis</i>	BPID00163A	BBID00163A
<i>Gemella bergeri</i>	BPID00164A	BBID00164A
<i>Gemella haemolysans</i>	BPID00165A	BBID00165A
<i>Gemella morbillorum</i>	BPID00166A	BBID00166A
<i>Geobacillus stearothermophilus</i>	BPID00167A	BBID00167A
<i>Granulicatella adiacens</i>	BPID00168A	BBID00168A
<i>Granulicatella elegans</i>	BPID00169A	BBID00169A
<i>Haemophilus ducreyi</i>	BPID00170A	BBID00170A
<i>Haemophilus influenzae</i>	BPID00171A	BBID00171A
<i>Haemophilus parainfluenzae</i>	BPID00172A	BBID00172A
<i>Hafnia alvei</i>	BPID00173A	BBID00173A
<i>Helicobacter cinaedi</i>	BPID00174A	BBID00174A
<i>Helicobacter fennelliae</i>	BPID00175A	BBID00175A
<i>Helicobacter pylori</i>	BPID00176A	BBID00176A
<i>Inquilinus limosus</i>	BPID00177A	BBID00177A

# Bacterial identification assays

<i>Kingella denitrificans</i>	BPID00178A	BBID00178A
<i>Kingella kingae</i>	BPID00179A	BBID00179A
<i>Klebsiella granulomatis</i>	BPID00180A	BBID00180A
<i>Kocuria kristinae</i>	BPID00182A	BBID00182A
<i>Lachnobacterium bovis</i>	BPID00183A	BBID00183A
<i>Lactobacillus acidophilus</i>	BPID00184A	BBID00184A
<i>Lactobacillus spp. 1</i>	BPID00185A	BBID00185A
<i>Lactobacillus crispatus</i>	BPID00186A	BBID00186A
<i>Lactobacillus delbrueckii</i>	BPID00187A	BBID00187A
<i>Lactobacillus fermentum</i>	BPID00188A	BBID00188A
<i>Lactobacillus gasseri</i>	BPID00189A	BBID00189A
<i>Lactobacillus iners</i>	BPID00190A	BBID00190A
<i>Lactobacillus jensenii</i>	BPID00191A	BBID00191A
<i>Lactobacillus spp. 2</i>	BPID00193A	BBID00193A
<i>Lactobacillus rhamnosus</i>	BPID00195A	BBID00195A
<i>Lactobacillus salivarius</i>	BPID00196A	BBID00196A
<i>Lactobacillus vaginalis</i>	BPID00197A	BBID00197A
<i>Lactococcus garvieae</i>	BPID00198A	BBID00198A

# Bacterial identification assays

<i>Lactococcus lactis</i>	BPID00199A	BBID00199A
<i>Lautropia mirabilis</i>	BPID00200A	BBID00200A
<i>Legionella pneumophila</i>	BPID00201A	BBID00201A
<i>Leifsonia aquatica</i>	BPID00202A	BBID00202A
<i>Leptospira spp.</i>	BPID00203A	BBID00203A
<i>Leptotrichia amnionii</i>	BPID00204A	BBID00204A
<i>Leptotrichia buccalis</i>	BPID00205A	BBID00205A
<i>Leptotrichia goodfellowii</i>	BPID00206A	BBID00206A
<i>Leptotrichia wadei</i>	BPID00207A	BBID00207A
<i>Listeria monocytogenes</i>	BPID00208A	BBID00208A
<i>Lysinibacillus spp.</i>	BPID00209A	BBID00209A
<i>Janthinobacterium/Massilia spp.</i>	BPID00210A	BBID00210A
<i>Megasphaera micronuciformis</i>	BPID00211A	BBID00211A
<i>Megasphaera sp. DJF_B143</i>	BPID00212A	BBID00212A
<i>Methylobacterium fujisawaense</i>	BPID00213A	BBID00213A
<i>Methylobacterium mesophilicum</i>	BPID00214A	BBID00214A
<i>Methylobacterium zatmanii</i>	BPID00215A	BBID00215A
<i>Microbacterium binotii</i>	BPID00216A	BBID00216A

# Bacterial identification assays

<i>Micrococcus luteus</i>	BPID00217A	BBID00217A
<i>Mitsuokella multacida</i>	BPID00218A	BBID00218A
<i>Mobiluncus curtisii</i>	BPID00219A	BBID00219A
<i>Mobiluncus mulieris</i>	BPID00220A	BBID00220A
<i>Mogibacterium timidum</i>	BPID00221A	BBID00221A
<i>Moraxella catarrhalis</i>	BPID00222A	BBID00222A
<i>Moraxella lacunata</i>	BPID00223A	BBID00223A
<i>Morganella morganii</i>	BPID00224A	BBID00224A
<i>Mycobacterium spp. 1</i>	BPID00225A	BBID00225A
<i>Mycobacterium avium</i>	BPID00226A	BBID00226A
<i>Mycobacterium spp. 2</i>	BPID00227A	BBID00227A
<i>Mycobacterium intracellulare</i>	BPID00228A	BBID00228A
<i>Mycobacterium kansasii</i>	BPID00229A	BBID00229A
<i>Mycobacterium tuberculosis</i>	BPID00230A	BBID00230A
<i>Mycoplasma genitalium</i>	BPID00231A	BBID00231A
<i>Mycoplasma hominis</i>	BPID00232A	BBID00232A
<i>Mycoplasma orale</i>	BPID00233A	BBID00233A
<i>Mycoplasma pneumoniae</i>	BPID00234A	BBID00234A



# Bacterial identification assays

<i>Neisseria bacilliformis</i>	BPID00235A	BBID00235A
<i>Neisseria elongata</i>	BPID00237A	BBID00237A
<i>Neisseria flavescens</i>	BPID00238A	BBID00238A
<i>Neisseria gonorrhoeae</i>	BPID00239A	BBID00239A
<i>Neisseria lactamica</i>	BPID00240A	BBID00240A
<i>Neisseria meningitidis</i>	BPID00241A	BBID00241A
<i>Neisseria mucosa</i>	BPID00242A	BBID00242A
<i>Neisseria sicca</i>	BPID00243A	BBID00243A
<i>Neisseria subflava</i>	BPID00244A	BBID00244A
<i>Neorickettsia risticii</i>	BPID00245A	BBID00245A
<i>Nocardia spp.</i>	BPID00246A	BBID00246A
<i>Nocardia farcinica</i>	BPID00247A	BBID00247A
<i>Nocardioides sp. NS/27</i>	BPID00248A	BBID00248A
<i>Novosphingobium sp. K39</i>	BPID00249A	BBID00249A
<i>Ochrobactrum spp.</i>	BPID00250A	BBID00250A
<i>Oribacterium sinus</i>	BPID00251A	BBID00251A
<i>Paenibacillus larvae</i>	BPID00252A	BBID00252A
<i>Paenibacillus macerans</i>	BPID00253A	BBID00253A

# Bacterial identification assays

<i>Paenibacillus thiaminolyticus</i>	BPID00254A	BBID00254A
<i>Pantoea spp.</i>	BPID00255A	BBID00255A
<i>Papillibacter cinnamivorans</i>	BPID00256A	BBID00256A
<i>Parabacteroides distasonis</i>	BPID00257A	BBID00257A
<i>Parabacteroides merdae</i>	BPID00258A	BBID00258A
<i>Paracoccus marcusii</i>	BPID00259A	BBID00259A
<i>Parvimonas micra</i>	BPID00260A	BBID00260A
<i>Pasteurella multocida</i>	BPID00261A	BBID00261A
<i>Pediococcus acidilactici</i>	BPID00262A	BBID00262A
<i>Pediococcus pentosaceus</i>	BPID00263A	BBID00263A
<i>Peptoniphilus asaccharolyticus</i>	BPID00264A	BBID00264A
<i>Peptostreptococcus anaerobius</i>	BPID00265A	BBID00265A
<i>Peptostreptococcus stomatis</i>	BPID00266A	BBID00266A
<i>Plesiomonas shigelloides</i>	BPID00267A	BBID00267A
<i>Porphyromonas asaccharolytica</i>	BPID00269A	BBID00269A
<i>Porphyromonas endodontalis</i>	BPID00270A	BBID00270A
<i>Porphyromonas gingivalis</i>	BPID00271A	BBID00271A
<i>Prevotella bivia</i>	BPID00272A	BBID00272A

# Bacterial identification assays

<i>Prevotella buccalis</i>	BPID00273A	BBID00273A
<i>Prevotella copri</i>	BPID00274A	BBID00274A
<i>Prevotella denticola</i>	BPID00275A	BBID00275A
<i>Prevotella disiens</i>	BPID00276A	BBID00276A
<i>Prevotella intermedia</i>	BPID00277A	BBID00277A
<i>Prevotella loescheii</i>	BPID00278A	BBID00278A
<i>Prevotella melaninogenica</i>	BPID00279A	BBID00279A
<i>Prevotella nigrescens</i>	BPID00280A	BBID00280A
<i>Prevotella oralis</i>	BPID00281A	BBID00281A
<i>Prevotella oris</i>	BPID00282A	BBID00282A
<i>Prevotella tanneriae</i>	BPID00283A	BBID00283A
<i>Prevotella veroralis</i>	BPID00284A	BBID00284A
<i>Propionibacterium acnes</i>	BPID00285A	BBID00285A
<i>Propionibacterium propionicum</i>	BPID00286A	BBID00286A
<i>Proteus spp.</i>	BPID00287A	BBID00287A
<i>Pseudomonas aeruginosa</i>	BPID00288A	BBID00288A
<i>Pseudomonas spp. 2</i>	BPID00290A	BBID00290A
<i>Pseudomonas spp. 3</i>	BPID00291A	BBID00291A

# Bacterial identification assays

<i>Pseudoramibacter alactolyticus</i>	BPID00292A	BBID00292A
<i>Ewingella/Rahnella spp.</i>	BPID00293A	BBID00293A
<i>Ralstonia pickettii</i>	BPID00294A	BBID00294A
<i>Rhodococcus equi</i>	BPID00295A	BBID00295A
<i>Rothia spp.</i>	BPID00296A	BBID00296A
<i>Rothia mucilaginosa</i>	BPID00297A	BBID00297A
<i>Ruminococcus bromii</i>	BPID00298A	BBID00298A
<i>Ruminococcus gnavus</i>	BPID00299A	BBID00299A
<i>Ruminococcus obeum</i>	BPID00300A	BBID00300A
<i>Ruminococcus torques</i>	BPID00301A	BBID00301A
<i>Salmonella enterica</i>	BPID00302A	BBID00302A
<i>Selenomonas infelix</i>	BPID00303A	BBID00303A
<i>Selenomonas noxia</i>	BPID00304A	BBID00304A
<i>Selenomonas sputigena</i>	BPID00305A	BBID00305A
<i>Shigella dysenteriae</i>	BPID00307A	BBID00307A
<i>Shuttleworthia satelles</i>	BPID00308A	BBID00308A
<i>Sneathia sanguinegens</i>	BPID00309A	BBID00309A
<i>Solobacterium moorei</i>	BPID00310A	BBID00310A

# Bacterial identification assays

<i>Sphingomonas paucimobilis</i>	BPID00311A	BBID00311A
<i>Sphingomonas sp. AO1</i>	BPID00312A	BBID00312A
<i>Sporobacter termitidis</i>	BPID00313A	BBID00313A
<i>Staphylococcus aureus</i>	BPID00314A	BBID00314A
<i>Staphylococcus spp. 1</i>	BPID00315A	BBID00315A
<i>Staphylococcus epidermidis</i>	BPID00316A	BBID00316A
<i>Staphylococcus spp. 2</i>	BPID00317A	BBID00317A
<i>Stenotrophomonas maltophilia</i>	BPID00318A	BBID00318A
<i>Streptobacillus moniliformis</i>	BPID00319A	BBID00319A
<i>Streptococcus agalactiae</i>	BPID00320A	BBID00320A
<i>Streptococcus anginosus</i>	BPID00321A	BBID00321A
<i>Streptococcus australis</i>	BPID00322A	BBID00322A
<i>Streptococcus spp. 1</i>	BPID00323A	BBID00323A
<i>Streptococcus downei</i>	BPID00324A	BBID00324A
<i>Streptococcus gordonii</i>	BPID00325A	BBID00325A
<i>Streptococcus infantis</i>	BPID00326A	BBID00326A
<i>Streptococcus mitis</i>	BPID00327A	BBID00327A
<i>Streptococcus mutans</i>	BPID00328A	BBID00328A

# Bacterial identification assays

<i>Streptococcus spp. 2</i>	BPID00329A	BBID00329A
<i>Streptococcus pneumoniae</i>	BPID00331A	BBID00331A
<i>Streptococcus pyogenes</i>	BPID00332A	BBID00332A
<i>Streptococcus spp. 3</i>	BPID00333A	BBID00333A
<i>Streptococcus sanguinis</i>	BPID00334A	BBID00334A
<i>Streptococcus sinensis</i>	BPID00335A	BBID00335A
<i>Streptococcus suis</i>	BPID00336A	BBID00336A
<i>Streptomyces bikiniensis</i>	BPID00337A	BBID00337A
<i>Streptomyces spp. 1</i>	BPID00338A	BBID00338A
<i>Streptomyces spp. 2</i>	BPID00339A	BBID00339A
<i>Subdoligranulum variabile</i>	BPID00340A	BBID00340A
<i>Tannerella forsythia</i>	BPID00341A	BBID00341A
<i>Treponema denticola</i>	BPID00342A	BBID00342A
<i>Treponema pallidum</i>	BPID00343A	BBID00343A
<i>Treponema socranskii</i>	BPID00344A	BBID00344A
<i>Turicibacter sanguinis</i>	BPID00346A	BBID00346A
<i>Ureaplasma parvum</i>	BPID00347A	BBID00347A
<i>Ureaplasma urealyticum</i>	BPID00348A	BBID00348A

# Bacterial identification assays

<i>Varibaculum cambriense</i>	BPID00349A	BBID00349A
<i>Veillonella dispar</i>	BPID00350A	BBID00350A
<i>Veillonella parvula</i>	BPID00351A	BBID00351A
<i>Vibrio alginolyticus</i>	BPID00352A	BBID00352A
<i>Vibrio cholerae</i>	BPID00353A	BBID00353A
<i>Vibrio parahaemolyticus</i>	BPID00354A	BBID00354A
<i>Vibrio vulnificus</i>	BPID00355A	BBID00355A
<i>Weissella confusa</i>	BPID00356A	BBID00356A
<i>Yersinia enterocolitica</i>	BPID00357A	BBID00357A
<i>Yersinia spp.</i>	BPID00358A	BBID00358A

# Fungal and protist identification assays

## Fungal identification assays

Fungus	Assay catalog number	Assay kit catalog number
<i>Aspergillus flavus</i>	BPID00037A	BBID00037A
<i>Aspergillus fumigatus</i>	BPID00038A	BBID00038A
<i>Candida albicans</i>	BPID00092A	BBID00092A
<i>Candida glabrata</i>	BPID00093A	BBID00093A
<i>Candida krusei</i>	BPID00094A	BBID00094A
<i>Candida parapsilosis</i>	BPID00095A	BBID00095A
<i>Candida tropicalis</i>	BPID00096A	BBID00096A
<i>Pneumocystis jirovecii</i>	BPID00268A	BBID00268A

## Protist identification assays

Protist	Assay catalog number	Assay kit catalog number
<i>Trichomonas vaginalis</i>	BPID00345A	BBID00345A





# Antibiotic resistance gene detection assays

## Antibiotic resistance gene detection assays

Antibiotic resistance gene	Assay catalog number	Assay kit catalog number
<i>AAC(6)-Ib-cr</i>	BPAR00366A	BBAR00366A
<i>aacC1</i>	BPAR00367A	BBAR00367A
<i>aacC2</i>	BPAR00368A	BBAR00368A
<i>aacC4</i>	BPAR00369A	BBAR00369A
<i>aadA1</i>	BPAR00370A	BBAR00370A
<i>aadB</i>	BPAR00371A	BBAR00371A
<i>aphA6</i>	BPAR00373A	BBAR00373A
<i>mecA</i>	BPAR00374A	BBAR00374A
<i>BES-1</i>	BPAR00375A	BBAR00375A
<i>BIC-1</i>	BPAR00376A	BBAR00376A
<i>CTX-M-1</i> group	BPAR00377A	BBAR00377A
<i>CTX-M-8</i> group	BPAR00378A	BBAR00378A
<i>CTX-M-9</i> group	BPAR00379A	BBAR00379A
<i>GES</i>	BPAR00380A	BBAR00380A
<i>IMI &amp; NMC-A</i>	BPAR00381A	BBAR00381A
<i>KPC</i>	BPAR00382A	BBAR00382A
<i>Per-1</i> group	BPAR00383A	BBAR00383A

# Antibiotic resistance gene detection assays

<i>Per-2</i> group	BPAR00384A	BBAR00384A
<i>SFC-1</i>	BPAR00385A	BBAR00385A
<i>SFO-1</i>	BPAR00386A	BBAR00386A
<i>SHV</i>	BPAR00387A	BBAR00387A
<i>SHV(156D)</i>	BPAR00388A	BBAR00388A
<i>SHV(156G)</i>	BPAR00389A	BBAR00389A
<i>SHV(238G240E)</i>	BPAR00390A	BBAR00390A
<i>SHV(238G240K)</i>	BPAR00391A	BBAR00391A
<i>SHV(238S240E)</i>	BPAR00392A	BBAR00392A
<i>SHV(238S240K)</i>	BPAR00393A	BBAR00393A
<i>SME</i>	BPAR00394A	BBAR00394A
<i>TLA-1</i>	BPAR00395A	BBAR00395A
<i>VEB</i>	BPAR00396A	BBAR00396A
<i>ccrA</i>	BPAR00397A	BBAR00397A
<i>IMP-1</i> group	BPAR00398A	BBAR00398A
<i>IMP-12</i> group	BPAR00399A	BBAR00399A
<i>IMP-2</i> group	BPAR00400A	BBAR00400A
<i>IMP-5</i> group	BPAR00401A	BBAR00401A

# Antibiotic resistance gene detection assays

<i>NDM</i>	BPAR00402A	BBAR00402A
<i>VIM-1</i> group	BPAR00403A	BBAR00403A
<i>VIM-13</i>	BPAR00404A	BBAR00404A
<i>VIM-7</i>	BPAR00405A	BBAR00405A
<i>ACC-1</i> group	BPAR00406A	BBAR00406A
<i>ACC-3</i>	BPAR00407A	BBAR00407A
<i>ACT 5/7</i> group	BPAR00408A	BBAR00408A
<i>ACT-1</i> group	BPAR00409A	BBAR00409A
<i>CFE-1</i>	BPAR00410A	BBAR00410A
<i>CMY-10</i> group	BPAR00411A	BBAR00411A
<i>DHA</i>	BPAR00412A	BBAR00412A
<i>FOX</i>	BPAR00413A	BBAR00413A
<i>LAT</i>	BPAR00414A	BBAR00414A
<i>MIR</i>	BPAR00415A	BBAR00415A
<i>MOX</i>	BPAR00416A	BBAR00416A
<i>OXA-10</i> group	BPAR00417A	BBAR00417A
<i>OXA-18</i>	BPAR00418A	BBAR00418A
<i>MOX</i>	BPAR00416A	BBAR00416A

# Antibiotic resistance gene detection assays

<i>OXA-10</i> group	BPAR00417A	BBAR00417A
<i>OXA-18</i>	BPAR00418A	BBAR00418A
<i>OXA-2</i> group	BPAR00419A	BBAR00419A
<i>OXA-23</i> group	BPAR00420A	BBAR00420A
<i>OXA-24</i> group	BPAR00421A	BBAR00421A
<i>OXA-45</i>	BPAR00422A	BBAR00422A
<i>OXA-48</i> group	BPAR00423A	BBAR00423A
<i>OXA-50</i> group	BPAR00424A	BBAR00424A
<i>OXA-51</i> group	BPAR00425A	BBAR00425A
<i>OXA-54</i>	BPAR00426A	BBAR00426A
<i>OXA-55</i>	BPAR00427A	BBAR00427A
<i>OXA-58</i> group	BPAR00428A	BBAR00428A
<i>OXA-60</i>	BPAR00429A	BBAR00429A
<i>OXA-62</i>	BPAR00430A	BBAR00430A
<i>ereB</i>	BPAR00431A	BBAR00431A
<i>QepA</i>	BPAR00432A	BBAR00432A
<i>QnrA</i>	BPAR00433A	BBAR00433A
<i>QnrB-1</i> group	BPAR00434A	BBAR00434A

# Antibiotic resistance gene detection assays

<i>QnrB-31</i> group	BPAR00435A	BBAR00435A
<i>QnrB-4</i> group	BPAR00436A	BBAR00436A
<i>QnrB-5</i> group	BPAR00437A	BBAR00437A
<i>QnrB-8</i> group	BPAR00438A	BBAR00438A
<i>QnrC</i>	BPAR00439A	BBAR00439A
<i>QnrD</i>	BPAR00440A	BBAR00440A
<i>QnrB-1</i> group	BPAR00434A	BBAR00434A
<i>QnrB-31</i> group	BPAR00435A	BBAR00435A
<i>QnrB-4</i> group	BPAR00436A	BBAR00436A
<i>QnrB-5</i> group	BPAR00437A	BBAR00437A
<i>QnrB-8</i> group	BPAR00438A	BBAR00438A
<i>QnrC</i>	BPAR00439A	BBAR00439A
<i>QnrD</i>	BPAR00440A	BBAR00440A
<i>QnrS</i>	BPAR00441A	BBAR00441A
<i>ermA</i>	BPAR00442A	BBAR00442A
<i>ermB</i>	BPAR00443A	BBAR00443A
<i>ermC</i>	BPAR00444A	BBAR00444A
<i>mefA</i>	BPAR00445A	BBAR00445A

## Antibiotic resistance gene detection assays

<i>msrA</i>	BPAR00446A	BBAR00446A
<i>OprJ</i>	BPAR00447A	BBAR00447A
<i>Oprm</i>	BPAR00448A	BBAR00448A
<i>tetA</i>	BPAR00449A	BBAR00449A
<i>tetB</i>	BPAR00450A	BBAR00450A
<i>vanB</i>	BPAR00451A	BBAR00451A
<i>vanC</i>	BPAR00452A	BBAR00452A

## Virulence factor gene detection assays

Virulence factor gene	Assay catalog number	Assay kit catalog number
<i>badA</i>	BPVF00453A	BBVF00453A
<i>bepB</i>	BPVF00454A	BBVF00454A
<i>ptxA</i>	BPVF00455A	BBVF00455A
<i>wbkA</i>	BPVF00456A	BBVF00456A
<i>wzt</i>	BPVF00457A	BBVF00457A
<i>flhA</i>	BPVF00458A	BBVF00458A
<i>fliF</i>	BPVF00459A	BBVF00459A
<i>waaC</i>	BPVF00460A	BBVF00460A

# Virulence factor gene detection assays

<i>pkn5</i>	BPVF00461A	BBVF00461A
<i>CT456</i>	BPVF00462A	BBVF00462A
<i>tcdB</i>	BPVF00463A	BBVF00463A
<i>tcdA</i>	BPVF00464A	BBVF00464A
<i>cloSI</i>	BPVF00465A	BBVF00465A
<i>spaA</i>	BPVF00466A	BBVF00466A
<i>spaB</i>	BPVF00467A	BBVF00467A
<i>ace (E. faecalis)</i>	BPVF00468A	BBVF00468A
<i>efaA</i>	BPVF00469A	BBVF00469A
<i>aslA</i>	BPVF00470A	BBVF00470A
<i>chuS</i>	BPVF00471A	BBVF00471A
<i>eae</i>	BPVF00472A	BBVF00472A
<i>stx2A</i>	BPVF00473A	BBVF00473A
<i>stx1B</i>	BPVF00474A	BBVF00474A
<i>hap</i>	BPVF00475A	BBVF00475A
<i>tbpA</i>	BPVF00476A	BBVF00476A
<i>flaB</i>	BPVF00477A	BBVF00477A
<i>oipA</i>	BPVF00478A	BBVF00478A

# Virulence factor gene detection assays

<i>flgG</i>	BPVF00479A	BBVF00479A
<i>ureA</i>	BPVF00480A	BBVF00480A
<i>ureI</i>	BPVF00481A	BBVF00481A
<i>icmK</i>	BPVF00482A	BBVF00482A
<i>lepA</i>	BPVF00483A	BBVF00483A
<i>rpoS</i>	BPVF00484A	BBVF00484A
<i>htpB</i>	BPVF00485A	BBVF00485A
<i>plcA</i>	BPVF00486A	BBVF00486A
<i>iap</i>	BPVF00487A	BBVF00487A
<i>InlA</i>	BPVF00488A	BBVF00488A
<i>bsh</i>	BPVF00489A	BBVF00489A
<i>clpC</i>	BPVF00490A	BBVF00490A
<i>mbtA</i>	BPVF00491A	BBVF00491A
<i>mbtD</i>	BPVF00492A	BBVF00492A
<i>mbtE</i>	BPVF00493A	BBVF00493A
<i>lbpA</i>	BPVF00494A	BBVF00494A
<i>pilG</i>	BPVF00495A	BBVF00495A
<i>fleN</i>	BPVF00496A	BBVF00496A



# Virulence factor gene detection assays

<i>flgK</i>	BPVF00497A	BBVF00497A
<i>fljG</i>	BPVF00498A	BBVF00498A
<i>fljN</i>	BPVF00499A	BBVF00499A
<i>lasI</i>	BPVF00500A	BBVF00500A
<i>invA</i>	BPVF00501A	BBVF00501A
<i>fimH</i>	BPVF00502A	BBVF00502A
<i>phoP</i>	BPVF00503A	BBVF00503A
<i>spaO</i>	BPVF00504A	BBVF00504A
<i>spaP</i>	BPVF00505A	BBVF00505A
<i>stxA</i>	BPVF00506A	BBVF00506A
<i>stxB</i>	BPVF00507A	BBVF00507A
<i>iucA</i>	BPVF00508A	BBVF00508A
<i>iucB</i>	BPVF00509A	BBVF00509A
<i>iucC</i>	BPVF00510A	BBVF00510A
<i>iucD</i>	BPVF00511A	BBVF00511A
<i>iutA</i>	BPVF00512A	BBVF00512A
<i>hla</i>	BPVF00513A	BBVF00513A
<i>hlb</i>	BPVF00514A	BBVF00514A

# Virulence factor gene detection assays

<i>hlgB</i>	BPVF00515A	BBVF00515A
<i>hlgC</i>	BPVF00516A	BBVF00516A
<i>lukF</i>	BPVF00517A	BBVF00517A
<i>spa</i>	BPVF00518A	BBVF00518A
<i>neuC</i>	BPVF00519A	BBVF00519A
<i>cpsL</i>	BPVF00520A	BBVF00520A
<i>ply</i>	BPVF00521A	BBVF00521A
<i>lytA</i>	BPVF00522A	BBVF00522A
<i>speB</i>	BPVF00523A	BBVF00523A
<i>slo</i>	BPVF00524A	BBVF00524A
<i>clpB</i>	BPVF00525A	BBVF00525A
<i>vasH</i>	BPVF00526A	BBVF00526A
<i>ace (V. cholerae)</i>	BPVF00527A	BBVF00527A
<i>ctxA</i>	BPVF00528A	BBVF00528A
<i>zot</i>	BPVF00529A	BBVF00529A
<i>fliC2</i>	BPVF00530A	BBVF00530A
<i>fliA</i>	BPVF00531A	BBVF00531A
<i>YE2522</i>	BPVF00532A	BBVF00532A

# Virulence factor gene detection and control assays

<i>ystA</i>	BPVF00533A	BBVF00533A
<i>inv</i>	BPVF00534A	BBVF00534A
<i>psaC</i>	BPVF00535A	BBVF00535A
<i>psaA</i>	BPVF00536A	BBVF00536A
<i>ail</i>	BPVF00537A	BBVF00537A
<i>ybtT</i>	BPVF00538A	BBVF00538A
<i>psaB</i>	BPVF00539A	BBVF00539A

## Control assays

Control target	Assay catalog number	Assay kit catalog number
Pan <i>Aspergillus/Candida</i>	BPCL00359A	BBCL00359A
Pan Bacteria 1	BPCL00360A	BBCL00360A
Pan Bacteria 3	BPCL00362A	BBCL00362A
Human <i>GAPDH</i> genomic DNA	BPCL00363A	BBCL00363A
Human <i>HBB1</i> genomic DNA	BPCL00364A	BBCL00364A
Mouse <i>GAPDH</i> genomic DNA	BPCL00540A	BBCL00540A
Mouse <i>HBB1</i> genomic DNA	BPCL00541A	BBCL00541A
Positive PCR Control	BPCL00365A	BBCL00365A

## Ordering Information

Product	Contents	Cat. no.
Microbial DNA qPCR Assays	One 100 µl tube Microbial DNA qPCR Assay, one 1.35 ml tube Microbial qPCR Mastermix	330025
Microbial DNA qPCR Assay Kits	One 20 µl tube Microbial DNA qPCR Assay, 1 tube Positive PCR Control (20 µl), 1 tube Microbial DNA Positive Control (50 µl), 1 tube Microbial DNA-Free Water (1.35 ml), 1 tube Microbial qPCR Mastermix (1.35 ml)	330033

Microbial DNA qPCR Assays and Microbial DNA qPCR Assay Kits are intended for molecular biology use only. These products are not intended for the diagnosis, prevention, or treatment of a disease.

Learn more at [www.qiagen.com/microbiome!](http://www.qiagen.com/microbiome!)

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