

Microbial DNA qPCR Array

Antibiotic Resistance Genes

Cat. no. 330261 BAID-1901ZRA

For real-time PCR-based, application-specific microbial identification or profiling

The Antibiotic Resistance Genes Microbial DNA qPCR Array is a research tool used for the detection and relative profiling of antibiotic resistance genes. This array provides microbiology researchers with a convenient way to quickly detect the presence of antibiotic resistance genes that may be present in isolated bacterial colonies, bacteria from blood culture, metagenomic samples, or other sample types. The array contains assays for 87 antibiotic resistance genes belonging to aminoglycoside, β -lactam, erythromycin, fluoroquinolone, macrolide-lincosamide-streptogramin B, tetracycline, vancomycin, and multidrug resistance classifications. The qPCR assays use PCR amplification primers and hydrolysis-probe detection, increasing the specificity of each assay. Pan-bacteria assays that detect a broad range of bacterial species are included to serve as positive controls for the presence of bacterial DNA, and the Positive PCR Control assay is included to test for the presence of PCR inhibitors and the efficiency of the polymerase chain reaction. The arrays also include the appropriate Microbial qPCR Mastermix and Microbial DNA-Free Water. The simplicity of the product format and operating procedure allow routine and reliable screening of antibiotic resistance genes from samples in any research laboratory with access to a real-time PCR instrument.



Sample & Assay Technologies

Format	For use with the following real-time cyclers
Format A, with fluorescein	Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2
Format A, with ROX	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well blocks); Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®
Format C, with ROX	Applied Biosystems models 7500 (Fast, 96-well block), 7900HT (Fast, 96-well block), StepOnePlus™, ViiA 7 (Fast, 96-well block)
Format D, with ROX	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
Format E, with ROX	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
Format F, with ROX	Roche® LightCycler® 480 (96-well block)
Format G, with ROX	Roche LightCycler 480 (384-well block)

Shipping and storage

Microbial DNA qPCR Arrays are shipped at ambient temperature or on blue ice packs. For long-term storage, keep plates at –20°C. Ensure that you have the correct Microbial DNA qPCR Array format for your real-time cycler (see table above). Microbial qPCR Mastermixes are shipped on blue ice packs. For long-term storage, keep Microbial qPCR Mastermixes at –20°C. Microbial DNA-Free Water is shipped at ambient temperature or on blue ice packs. If unopened, Microbial DNA-Free Water can be stored at room temperature or at –20°C. If tube is opened, store Microbial DNA-Free Water at –20°C. Discard tube of Microbial DNA-Free Water if opened three times and use fresh tube of Microbial DNA-Free Water for future experiments.

Note: Ensure that you have the correct Microbial qPCR Mastermixes, with the correct reference dye if required, for your instrument.

Note: Open the package and store the products appropriately immediately upon receipt.

Assay Table

Position	Species (NCBI Tax ID)/Gene	NCBI Tax ID	Antibiotic classification / Gene Description	May detect (species) / Also detect (antibiotic resistance genes) / Associated species (virulence factor genes)	Sensitivity	Assay Catalog #
A01	AAC(6)-Ib-cr		Fluoroquinolone resistance		100	BPAR00366A
A02	aacC1		Aminoglycoside-resistance		50	BPAR00367A
A03	aacC2		Aminoglycoside-resistance		30	BPAR00368A
A04	aacC4		Aminoglycoside-resistance		20	BPAR00369A
A05	aadA1		Aminoglycoside-resistance		200	BPAR00370A
A06	aphA6		Aminoglycoside-resistance		40	BPAR00373A
A07	BES-1		Class A beta-lactamase		20	BPAR00375A
A08	BIC-1		Class A beta-lactamase		100	BPAR00376A
A09	CTX-M-1 Group		Class A beta-lactamase	Detects CTX-M-1 type (37 variants)	50	BPAR00377A
A10	CTX-M-8 Group		Class A beta-lactamase	Detects CTX-M-8 type (3 variants)	40	BPAR00378A
A11	CTX-M-9 Group		Class A beta-lactamase	Detects CTX-M-9 type (40 variants)	30	BPAR00379A
A12	GES		Class A beta-lactamase	GES,IBC	20	BPAR00380A
B01	IMI & NMC-A		Class A beta-lactamase	NMC-A,IMI-2,IMI-3	30	BPAR00381A
B02	KPC		Class A beta-lactamase	KPC-1,KPC-2,KPC-3,KPC-4,KPC-5,KPC-6,KPC-7,KPC-8,KPC-9,KPC-10,KPC-11	40	BPAR00382A
B03	Per-1 group		Class A beta-lactamase	Per-1,Per-3,Per-4,Per-5	30	BPAR00383A
B04	Per-2 group		Class A beta-lactamase	Per-2,Per-6	50	BPAR00384A
B05	SFC-1		Class A beta-lactamase		50	BPAR00385A
B06	SFO-1		Class A beta-lactamase		20	BPAR00386A
B07	SHV		Class A beta-lactamase		200	BPAR00387A
B08	SHV(156D)		Class A beta-lactamase		100	BPAR00388A
B09	SHV(156G)		Class A beta-lactamase		50	BPAR00389A
B10	SHV(238G240E)		Class A beta-lactamase		30	BPAR00390A
B11	SHV(238G240K)		Class A beta-lactamase		40	BPAR00391A
B12	SHV(238S240E)		Class A beta-lactamase		50	BPAR00392A
C01	SHV(238S240K)		Class A beta-lactamase		30	BPAR00393A
C02	SME		Class A beta-lactamase	SME-1,SME-2,SME-3	30	BPAR00394A
C03	TLA-1		Class A beta-lactamase		50	BPAR00395A
C04	VEB		Class A beta-lactamase	VEB-1,VEB-2,VEB-3,VEB-4,VEB-5,VEB-6,VEB-7	20	BPAR00396A
C05	ccrA		Class B beta-lactamase		30	BPAR00397A
C06	IMP-1 group		Class B beta-lactamase	IMP-1,IMP-3,IMP-4,IMP-6,IMP-10,IMP-25,IMP-26	50	BPAR00398A
C07	IMP-12 group		Class B beta-lactamase	IMP-12,IMP-14,IMP-16,IMP-18	200	BPAR00399A
C08	IMP-2 group		Class B beta-lactamase	IMP-2,IMP-8,IMP-11,IMP-19,IMP-20,IMP-21,IMP-24	30	BPAR00400A
C09	IMP-5 group		Class B beta-lactamase	IMP-5,IMP-7,IMP-9,IMP-13,IMP-15,IMP-22	200	BPAR00401A
			Class B			

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C10	NDM		beta-lactamase	NDM-1,NDM-2	50	BPAR00402A
C11	VIM-1 group		Class B beta-lactamase	VIM-1,VIM-2,VIM-3,VIM-4,VIM-5,VIM-6,VIM-8,VIM-9,VIM-10,VIM-11,VIM-12,VIM-14,VIM-15,VIM-16,VIM-17,VIM-18,VIM-19,VIM-20,VIM-23,VIM-24,VIM-25,VIM-26	50	BPAR00403A
C12	VIM-13		Class B beta-lactamase	VIM-13 (28 variants)	20	BPAR00404A
D01	VIM-7		Class B beta-lactamase		40	BPAR00405A
D02	ACC-1 group		Class C beta-lactamase	ACC-1,ACC-2,ACC-4	100	BPAR00406A
D03	ACC-3		Class C beta-lactamase		30	BPAR00407A
D04	ACT 5/7 group		Class C beta-lactamase	ACT-5,ACT-7	30	BPAR00408A
D05	ACT-1 group		Class C beta-lactamase	ACT-1,ACT-2,ACT-3,ACT-4,ACT-6	100	BPAR00409A
D06	CFE-1		Class C beta-lactamase		50	BPAR00410A
D07	CMY-10 Group		Class C beta-lactamase	CMY-1,CMY-8,CMY-9,CMY-10,CMY-19	30	BPAR00411A
D08	DHA		Class C beta-lactamase	DHA-1,DHA-2,DHA-3,DHA-5,DHA-6,DHA-7	20	BPAR00412A
D09	FOX		Class C beta-lactamase	FOX-1,FOX-2,FOX-3,FOX-4,FOX-5,FOX-6,FOX-7	100	BPAR00413A
D10	LAT		Class C beta-lactamase	LAT-1,LAT-3,LAT-4,CMY-2 group	100	BPAR00414A
D11	MIR		Class C beta-lactamase	MIR-1,MIR-2,MIR-3,MIR-4,MIR-5	30	BPAR00415A
D12	MOX		Class C beta-lactamase	MOX-1,MOX-2,MOX-3,MOX-4,MOX-5,MOX-6,MOX-7	30	BPAR00416A
E01	OXA-10 Group		Class D beta-lactamase	OXA-10,OXA-11,OXA-14,OXA-16,OXA-17,OXA-19,OXA-28,OXA-35,OXA-142,OXA-145,OXA-147	20	BPAR00417A
E02	OXA-18		Class D beta-lactamase		30	BPAR00418A
E03	OXA-2 Group		Class D beta-lactamase	OXA-2,OXA-15,OXA-32,OXA-34,OXA-141,OXA-161	40	BPAR00419A
E04	OXA-23 Group		Class D beta-lactamase	OXA-23,OXA-27,OXA-49,OXA-73,OXA-133,OXA-146,OXA-165,OXA-166,OXA-167,OXA-168,OXA-169,OXA-170,OXA-171	50	BPAR00420A
E05	OXA-24 Group		Class D beta-lactamase	OXA-24,OXA-25,OXA-26,OXA-40,OXA-72,OXA-139,OXA-160	20	BPAR00421A
E06	OXA-45		Class D beta-lactamase		100	BPAR00422A
E07	OXA-48 Group		Class D beta-lactamase	OXA-48,OXA-162,OXA-163,OXA-181	50	BPAR00423A
E08	OXA-50 Group		Class D beta-lactamase	OXA-50 group (50 variants)	20	BPAR00424A
E09	OXA-51 Group		Class D beta-lactamase	OXA-51 group (65 variants)	100	BPAR00425A
E10	OXA-54		Class D beta-lactamase		20	BPAR00426A
E11	OXA-55		Class D beta-lactamase	OXA-55,OXA-SH	30	BPAR00427A
E12	OXA-58 Group		Class D beta-lactamase	OXA-58,OXA-96,OXA-97,OXA-164	20	BPAR00428A
F01	OXA-60		Class D beta-lactamase	OXA-60,OXA-60a,OXA-60b,OXA-60c	30	BPAR00429A
F02	ereB		Erythromycin resistance		20	BPAR00431A
			Fluoroquinolone			

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F03	QepA		resistance	QepA1,QepA2	50	BPAP00432A
F04	QnrA		Fluoroquinolone resistance	QnrA1,QnrA2,QnrA3,QnrA4,QnrA5,QnrA6,QnrA7	40	BPAP00433A
F05	QnrB-1 group		Fluoroquinolone resistance	QnrB1,QnrB2,QnrB3,QnrB6,QnrB7,QnrB9,QnrB13,QnrB14,QnrB15,QnrB16,QnrB17,QnrB18,QnrB20,QnrB23,QnrB24,QnrB29,QnrB30	20	BPAP00434A
F06	QnrB-31 group		Fluoroquinolone resistance	QnrB31,QnrB32	20	BPAP00435A
F07	QnrB-4 group		Fluoroquinolone resistance	QnrB4,QnrB11,QnrB12,QnrB22	30	BPAP00436A
F08	QnrB-5 group		Fluoroquinolone resistance	QnrB5,QnrB10,QnrB19	40	BPAP00437A
F09	QnrB-8 group		Fluoroquinolone resistance	QnrB8,QnrB21,QnrB25,QnrB27,QnrB28	20	BPAP00438A
F10	QnrC		Fluoroquinolone resistance		30	BPAP00439A
F11	QnrD		Fluoroquinolone resistance		40	BPAP00440A
F12	QnrS		Fluoroquinolone resistance	QnrS1,QnrS2,QnrS3,QnrS4	40	BPAP00441A
G01	ermA		Macrolide Lincosamide Streptogramin_b		100	BPAP00442A
G02	ermB		Macrolide Lincosamide Streptogramin_b		20	BPAP00443A
G03	ermC		Macrolide Lincosamide Streptogramin_b		100	BPAP00444A
G04	mefA		Macrolide Lincosamide Streptogramin_b		100	BPAP00445A
G05	msrA		Macrolide Lincosamide Streptogramin_b		100	BPAP00446A
G06	oprJ		Multidrug resistance efflux pump		50	BPAP00447A
G07	oprM		Multidrug resistance efflux pump		20	BPAP00448A
G08	tetA		Tetracycline efflux pump		40	BPAP00449A
G09	tetB		Tetracycline efflux pump		30	BPAP00450A
G10	vanB		Vancomycin resistance		100	BPAP00451A
G11	vanC		Vancomycin resistance		30	BPAP00452A
G12	Staphylococcus aureus	1280		Staphylococcus epidermidis(1282)	100	BPID00314A
H01	mecA		Beta-lactam resistance		40	BPAP00374A
H02	lukF		Panton-Valentine leukocidin chain F precursor	Staphylococcus aureus	20	BPVF00517A
H03	spa		Immunoglobulin G binding protein A precursor	Staphylococcus aureus	200	BPVF00518A
H04	Pan Bacteria 1					BPCL00360A
H05	Pan Bacteria 1					BPCL00360A
H06	Pan Bacteria 1					BPCL00360A
H07	Pan Bacteria 3					BPCL00362A
H08	Pan Bacteria 3					BPCL00362A
H09	Pan Bacteria 3					BPCL00362A
H10	PPC					BPCL00365A
H11	PPC					BPCL00365A
H12	PPC					BPCL00365A

No Template Control (NTC)>35

Microbial DNA Positive Control<34

Note: On Stratagene instruments, Ct of the positive control template >34



Ordering Information

Product	Contents	Cat. no.
Microbial DNA qPCR Array	Array plate, master mix, and microbial DNA-free water for detection of microbial species or genes	330261
Related Products		
Supplemental Microbial qPCR Mastermix ROX™	2 tubes of 1.35 ml each	330530
Supplemental Microbial qPCR Mastermix Fluor	2 tubes of 1.35 ml each	330540
Microbial DNA-Free Water	12 tubes of 1.35 ml each	338132

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

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