

***Vibrio cholerae* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 12**

**Catalog No. NR-19690**

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**Contributor:**

Pathogen Functional Genomics Resource Center at the J. Craig Venter Institute

**Manufacturer:**

BEI Resources

**Product Description:**

The *Vibrio cholerae* (*V. cholerae*) Gateway® clone set consists of 46 plates which contain 3813 sequence validated clones from *V. cholerae*, strain El Tor N16961 cloned in *Escherichia coli* (*E. coli*) DH10B-T1 cells. Each open reading frame was constructed in vector [pDONR™221](#) with a native start codon and stop codon. The library was independently cloned and sequence verified by the Harvard Institute of Proteomics. Detailed information about each clone is shown in Table 1.

Information related to the use of Gateway® Clones can be obtained from [Invitrogen™](#). Recombination was facilitated through an *attB* substrate (*attB*-PCR product or a linearized *attB* expression clone) with an *attP* substrate (pDONR™221) to create an *attL*-containing entry clone. The entry clone contains recombinational cloning sites, *attL1* and *attL2* to facilitate gene transfer into a destination vector, M13 forward and reverse priming sites for sequencing and a kanamycin resistance gene for selection. Please refer to the [Invitrogen™ Gateway® Technology Manual](#) for additional details.

**Material Provided:**

Each inoculated well of the 96-well plate contains approximately 40 µL of *E. coli* culture (strain DH10B-T1) in Luria Bertani (LB) Broth containing 50 µg/mL kanamycin supplemented with 15% glycerol.

**Note:** Production in the 96-well format has increased risk of cross-contamination between adjacent wells. Individual clones should be purified (e.g. single colony isolation and purification using good microbiological practices) and sequence-verified prior to use. BEI Resources cannot confirm or validate any clone not identified on the plate information table.

**Packaging/Storage:**

NR-19690 was packaged aseptically in a 96-well plate. The product is provided frozen and should be stored at -80°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

**Growth Conditions:**

Media:

LB Broth or Agar containing 50 µg/mL kanamycin

Incubation:

Temperature: *E. coli*, strain DH10B-T1 clones should be grown at 37°C.

Atmosphere: Aerobic

Propagation:

1. Scrape top of frozen well with a pipette tip and streak onto agar plate.
2. Incubate the plates at 37°C for 17 to 24 hours.

**Citation:**

Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: *Vibrio cholerae* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 12, NR-19690.”

**Biosafety Level: 1**

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. [Biosafety in Microbiological and Biomedical Laboratories](#). 5th ed. Washington, DC: U.S. Government Printing Office, 2007; see [www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

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**References:**

1. Heidelberg, J. F., et al. "DNA Sequence of Both Chromosomes of the Cholera Pathogen *Vibrio cholerae*." *Nature* 406 (2000): 477-483. PubMed. 10952301.

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**Table 1: *Vibrio cholerae* Gateway® Clones, Plate 12**

Clone ID	Well Position	ORF Length	Locus ID	Symbol	Product	Accession Number
199939	A02	291	VC1964		hypothetical protein	NP_231598.1
199966	A03	160	VC2569		hypothetical protein	NP_232197.1
199980	A04	181	VC1968		transcriptional regulator, HTH_3 family	NP_231602.1
200294	A05	308	VC1336	prpB	carboxyphosphoenolpyruvate phosphonmutase	NP_230980.1
200317	A06	334	VC2508	argF	ornithine carbamoyltransferase	NP_232137.1
200338	A07	431	VC1941		hypothetical protein	NP_231575.1
200371	A08	245	VC2505	rluA-1	ribosomal large subunit pseudouridine synthase A	NP_232134.1
198260	A09	283	VC2175	kdsA	2-dehydro-3-deoxyphosphooctonate aldolase	NP_231806.1
198280	A10	333	VC0538	cysP	thiosulfate ABC transporter, periplasmic thiosulfate-binding protein	NP_230189.1
198294	A11	376	VC0541	cysA	sulfate ABC transporter, ATP-binding protein	NP_230192.1
174208	A12	165	VC0440	folA	dihydrofolate reductase	NP_230094.1
199917	B01	245	VC1365		conserved hypothetical protein	NP_231009.1
199941	B02	288	VC1973	menB	naphthoate synthase	NP_231607.2
199967	B03	N/A	VCA0930		conserved hypothetical protein	N/A
199986	B04	193	VC2619	pabA	para-aminobenzoate synthase glutamine amidotransferase, component II	NP_232247.1
200296	B05	309	VC1947		transcriptional regulator, LysR family	NP_231581.1
200324	B06	377	VC1337	prpC	methylcitrate synthase	NP_230981.1
200341	B07	160	VC1323		hypothetical protein	NP_230967.1
198242	B08	263	VC0531	surE	survival protein SurE	NP_230182.1
198262	B09	287	VC0540	cysW	sulfate ABC transporter, permease protein	NP_230191.1
198281	B10	139	VC0974		transcriptional regulator, MerR family	NP_230621.1
198301	B11	169	VC0964	crr	PTS system, glucose-specific IIA component	NP_230611.1
174212	B12	432	VC0626	hemL	glutamate-1-semialdehyde 2,1-aminomutase	NP_230275.1
199923	C01	N/A	VCA0937		transcriptional regulator, AraC-XylS family	N/A
199942	C02	82	VC1368		hypothetical protein	NP_231012.1
199969	C03	339	VC2617		arginine-ornithine succinyltransferase, putative	NP_232245.2
199988	C04	196	VC2607		NAD(P)H oxidoreductase, putative	NP_232235.1
200298	C05	310	VC1936		phosphatidate cytidyltransferase, putative	NP_231570.1
200325	C06	N/A	VCA0880		hypothetical protein	N/A
200345	C07	163	VC2518		conserved hypothetical protein	NP_232147.1
198246	C08	270	VC2176		conserved hypothetical protein	NP_231807.1
198264	C09	291	VC0970	zipA	cell division protein ZipA	NP_230617.1
198283	C10	145	VC2167		hypothetical protein	NP_231798.1
198308	C11	417	VC2171	uraA	uracil permease	NP_231802.1
174216	C12	167	VC0593	folK-2	2-amino-4-hydroxy-6-hydroxymethyl-dihydropteridine pyrophosphokinase	NP_230243.1
199925	D01	263	VC2615		conserved hypothetical protein	NP_232243.1
199943	D02	299	VC2561	cysG	uroporphyrin-III C-methyltransferase	NP_232189.1

Clone ID	Well Position	ORF Length	Locus ID	Symbol	Product	Accession Number
199972	D03	163	VC1962		lipoprotein	NP_231596.1
199990	D04	196	VC1965		hypothetical protein	NP_231599.1
200300	D05	311	VC1942	folD	methylenetetrahydrofolate dehydrogenase-methenyltetrahydrofolate cyclohydrolase	NP_231576.1
200326	D06	N/A	VCA0873	cydB-2	cytochrome d ubiquinol oxidase, subunit II	N/A
200361	D07	N/A	VCA0867	ompW	outer membrane protein OmpW	N/A
198248	D08	270	VC0522		beta-ketoadipate enol-lactone hydrolase, putative	NP_230173.1
198266	D09	294	VC0984	toxR	cholera toxin transcriptional activator	NP_230630.1
198285	D10	147	VC0519		conserved hypothetical protein	NP_230170.1
198309	D11	186	VC2166	wrbA	Trp repressor-binding protein	NP_231797.1
174220	D12	434	VC0465	tyrS-1	tyrosyl-tRNA synthetase	NP_230119.1
199927	E01	263	VC1974		conserved hypothetical protein	NP_231608.1
199947	E02	312	VC1363		siroheme synthase component enzyme	NP_231007.1
199973	E03	392	VC1372		GGDEF family protein	NP_231016.1
199994	E04	209	VC2568	fkIB	peptidyl-prolyl cis-trans isomerase, FKBP-type	NP_232196.1
200302	E05	N/A	VCA0876	dsdC	D-serine deaminase activator	N/A
200328	E06	400	VC1339		conserved hypothetical protein	NP_230983.1
200363	E07	220	VC1940		conserved hypothetical protein	NP_231574.1
198250	E08	271	VC0973		hypothetical protein	NP_230620.1
198273	E09	116	VC2165	arsC	arsenate reductase	NP_231796.1
198287	E10	147	VC0509		hypothetical protein	NP_230160.1
174144	E11	129	VC2771	atpI	ATP synthase protein I	NP_232397.1
174083	E12	91	VC0358		conserved hypothetical protein	NP_230012.1
199931	F01	273	VC1364		conserved hypothetical protein	NP_231008.1
199954	F02	N/A	VCA0415		conserved hypothetical protein	N/A
199974	F03	165	VC1963		conserved hypothetical protein	NP_231597.1
200288	F04	267	VC2520		ABC transporter, ATP-binding protein	NP_232149.1
200304	F05	N/A	VCA0870	pbpG	D-alanyl-D-alanine endopeptidase	N/A
200330	F06	N/A	VCA0862	fadL-3	long-chain fatty acid transport protein	N/A
200365	F07	223	VC1937		conserved hypothetical protein	NP_231571.1
198254	F08	275	VC0979		oxidoreductase, short-chain dehydrogenase-reductase family	NP_230626.1
198275	F09	122	VC0505		hypothetical protein	NP_230156.1
198288	F10	354	VC2162		permease PerM, putative	NP_231794.1
174188	F11	420	VC2398	ftsA	cell division protein FtsA	NP_232028.1
174111	F12	103	VC0850		conserved hypothetical protein	NP_230497.1
199935	G01	277	VC2626	dam	DNA adenine methylase	NP_232254.1
199963	G02	338	VC1369		conserved hypothetical protein	NP_231013.1
199978	G03	N/A	VCA0417		acetyltransferase, putative	N/A
200290	G04	275	VC1330		hypothetical protein	NP_230974.1
200310	G05	325	VC2504		2-hydroxyacid dehydrogenase family protein	NP_232133.1
200335	G06	155	VC2511	pyrI	aspartate carbamoyltransferase, regulatory subunit	NP_232140.1
200367	G07	234	VC1320		DNA-binding response regulator	NP_230964.1
198256	G08	N/A	VCA0255		hypothetical protein	N/A
198278	G09	324	VC0987	hemH	ferrochelataase	NP_230633.1
198289	G10	147	VC0508		hypothetical protein	NP_230159.1
174196	G11	421	VC1001	folC	folylpolyglutamate synthase-dihydrofolate synthase	NP_230647.1
174119	G12	109	VC1356		sulfite reductase, gamma subunit-related protein	NP_231000.1
199937	H01	289	VC2613	prkB	phosphoribulokinase	NP_232241.1
199964	H02	154	VC1379		hypothetical protein	NP_231023.1
199979	H03	443	VC1370		GGDEF family protein	NP_231014.1
200292	H04	287	VC1944	pvcB	PvcB protein	NP_231578.1
200314	H05	332	VC2522		conserved hypothetical protein	NP_232151.1

Clone ID	Well Position	ORF Length	Locus ID	Symbol	Product	Accession Number
200337	H06	156	VC1933		hypothetical protein	NP_231567.1
200369	H07	235	VC1335		transcriptional regulator, GntR family	NP_230979.1
198258	H08	283	VC0539	cysT	sulfate ABC transporter, permease protein	NP_230190.1
198279	H09	129	VC0524		dihydroneopterin aldolase FoIB, putative	NP_230175.1
198291	H10	155	VC2160	bcp	bacterioferritin comigratory protein	NP_231791.1
174204	H11	422	VC0760	hisS	histidyl-tRNA synthetase	NP_230409.1