Helicobacter pylori Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 18

Catalog No. NR-19494

This reagent is the tangible property of the U.S. Government.

For research use only. Not for human use.

Contributor:

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

Manufacturer:

BEI Resources

Product Description:

The *Helicobacter pylori* (*H. pylori)* Gateway® clone set consists of approximately 1600 sequence validated clones from *H. pylori*, strain 26695 and strain J99 cloned in *Escherichia coli* (*E. coli*) DH10B-T1 cells. Each open reading frame was constructed in vector pDONR™221 (Invitrogen™) with an ATG start codon and no stop codon. The sequence was validated by full length sequencing of each clone with greater than 1X coverage and a mutation rate of less than 0.2%. 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 *att*B substrate (*att*B-PCR product or a linearized *att*B expression clone) with an *att*P substrate (pDONR™221) to create an *att*L-containing entry clone. The entry clone contains recombinational cloning sites, *att*L1 and *att*L2 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 60 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-19494 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 24 hours.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Helicobacter pylori* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 18, NR-19494."

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, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government makes any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

© 2012 American Type Culture Collection (ATCC). All rights reserved.

Use Restrictions:

This material is distributed for internal research, non-commercial purposes only. This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

References:

1. Alm, R. A., et al. "Genomic-Sequence Comparison of Two Unrelated Isolates of the Human Pathogen *Helicobacter pylori*." Nature 397 (1999): 176-180. PubMed: 9923682.
2. Jungblut, P. R., et al. "Comparative Proteome Analysis of *Helicobacter pylori*." Mol. Microbiol. 36 (2000): 710-725. PubMed: 10844659.
3. Tomb, J. F., et al. "The Complete Genome Sequence of the Gastric Pathogen *Helicobacter pylori*. " Nature 388 (1997): 539-547. PubMed: 9252185.

ATCC® is a trademark of the American Type Culture Collection

Support Provided by NIAID

Table 1: *Helicobacter pylori* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 18 (ZHPAS)[1]

Strain	Clone	Well Position	Locus ID	Description (Gene name)	ORF Length	Accession Number[2]	Average Depth of Coverage
26695	62674	A01	HP1213	polynucleotide phosphorylase	2101	NP_208005.1	3.19895288
26695	62678	A02	HP1168	carbon starvation protein	2098	NP_207959.1	62678
26695	62698	A03	HP0082	methyl-accepting chemotaxis transducer	2056	NP_206882.1	2.869649805
26695	62707	A04	HP0407	biotin sulfoxide reductase	2425	NP_207205.1	2.484948454
26695	62711	A05	HP0870	flagellar hook	2191	NP_207664.1	3.905522592
26695	62714	A06	HP1088	transketolase A	1960	NP_207879.1	3.35255102
26695	62726	A07	HP0088	RNA polymerase sigma-70 factor	2050	NP_206888.1	4.332195122
26695	62735	A08	HP1472	type IIS restriction enzyme M protein	2074	NP_208263.1	4.449373192
26695	62749	A09	HP0417	methionyl-tRNA synthetase	1987	NP_207215.1	2.645697031
26695	62750	A10	HP0033	ATP-dependent C1p protease	2260	NP_206835.1	3.025663717
26695	62754	A11	HP0597	penicillin-binding protein 1A	2014	NP_207392.1	3.799900695
26695	62758	A12	HP0017	virB4 homolog	2398	NP_206819.1	2.837781485
26695	62763	B01	HP1271	NADH-ubiquinone oxidoreductase, NQO12 subunit	1873	NP_208063.1	4.019220502
26695	62766	B02	HP0025	outer membrane protein	2170	NP_206827.1	3.856682028
26695	62774	B03	HP0099	methyl-accepting chemotaxis protein	2062	NP_206899.1	3.826867119
26695	62791	B04	HP0440	DNA topoisomerase I	2068	NP_207238.1	3.888781431
26695	62795	B05	HP1177	outer membrane protein	1960	NP_207968.1	3.367346939
26695	62799	B06	HP1503	cation-transporting ATPase, P-type	2401	NP_208294.1	3.623490212
26695	62806	B07	HP0710	conserved hypothetical protein	2017	NP_207504.1	3.592464056
26695	62813	B08	HP0317	outer membrane protein	2272	NP_207115.1	3.073943662
26695	62819	B09	HP1089	hypothetical protein	2371	NP_207880.1	3.082665542
26695	62823	B10	HP0884	hypothetical protein	1879	NP_207677.1	3.712613092
26695	62826	B11	HP1100	6-phosphogluconate dehydratase	1861	NP_207891.1	3.746910263
26695	62830	B12	HP0615	DNA ligase	2005	NP_207410.1	3.220448878
26695	62835	C01	HP0524	cag pathogenicity island protein	2281	NP_207320.1	3.94169224
26695	62844	C02	HP0295	flagellin B homolog	2521	NP_207093.1	3.002380008
26695	62846	C03	HP1195	translation elongation factor EF-G	2113	NP_207986.1	3.297681022
26695	62850	C04	HP1523	DNA recombinase	1906	NP_208313.1	3.501573977
26695	62854	C05	HP1478	DNA helicase II	2083	NP_208269.1	4.133461354
26695	62858	C06	HP0513	hypothetical protein	2011	NP_207310.1	3.631029339
26695	62863	C07	HP1156	outer membrane protein	2125	NP_207947.1	3.989176471

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

© 2012 American Type Culture Collection (ATCC). All rights reserved.

Strain	Clone	Well Position	Locus ID	Description (Gene name)	ORF Length	Accession Number[2]	Average Depth of Coverage
26695	62866	C08	HP1556	cell division protein	1882	NP_208347.1	3.608926674
26695	62870	C09	HP0354	deoxyxylulose-5-phosphate synthase, putative	1891	NP_207152.1	4.261766261
26695	62874	C10	HP1072	copper-transporting ATPase, P-type	2272	NP_207863.1	3.603873239
J99	62882	C11	NT01HP0023	hypothetical protein	133	NA	2
J99	62886	C12	NT01HP1710	hypothetical protein	136	NA	2
J99	62890	D01	NT01HP1708	hypothetical protein	127	NA	-
J99	62895	D02	NT01HP1011	hypothetical protein	136	NA	2
J99	62898	D03	NT01HP1265	hypothetical protein	139	NA	-
J99	62903	D04	NT01HP0155	hypothetical protein	127	NA	-
J99	62907	D05	NT01HP1554	hypothetical protein	130	NA	2
J99	62915	D06	NT01HP1299	hypothetical protein	148	NA	2
J99	62918	D07	NT01HP0641	conserved hypothetical protein	142	NA	-
J99	62922	D08	NT01HP0236	hypothetical protein	148	NA	-
J99	62926	D09	NT01HP0153	hypothetical protein	133	NA	1.947368421
J99	62931	D10	NT01HP1001	hypothetical protein	142	NA	-
J99	62934	D11	NT01HP0017	hypothetical protein	148	NA	-
J99	62938	D12	NT01HP0474	hypothetical protein	139	NA	-
J99	62942	E01	NT01HP1315	hypothetical protein	136	NA	2
J99	62958	E02	NT01HP1197	hypothetical protein	145	NA	2
J99	62962	E03	NT01HP1610	hypothetical protein	127	NA	2
J99	62967	E04	NT01HP0351	hypothetical protein	124	NA	-
J99	62974	E05	NT01HP0061	hypothetical protein	127	NA	2
J99	62978	E06	NT01HP1706	hypothetical protein	130	NA	2
J99	62986	E07	NT01HP0770	hypothetical protein	145	NA	-
J99	62990	E08	NT01HP1591	hypothetical protein	148	NA	2
J99	62994	E09	NT01HP0755	hypothetical protein	136	NA	2
J99	63002	E10	NT01HP1089	hypothetical protein	130	NA	-
J99	63007	E11	NT01HP0486	hypothetical protein	124	NA	2
J99	63010	E12	NT01HP1491	conserved hypothetical protein	136	NA	-
J99	63014	F01	NT01HP0708	hypothetical protein	139	NA	-
J99	63023	F02	NT01HP1676	hypothetical protein	127	NA	2
J99	63027	F03	NT01HP0146	hypothetical protein	133	NA	-
J99	63030	F04	NT01HP1109	hypothetical protein	136	NA	2
J99	63034	F05	NT01HP0025	hypothetical protein	133	NA	2
J99	63038	F06	NT01HP0954	hypothetical protein	142	NA	2
J99	63042	F07	NT01HP0642	hypothetical protein	136	NA	2
J99	63047	F08	NT01HP0856	hypothetical protein	145	NA	2
J99	63055	F09	NT01HP0232	lipopolysaccharide biosynthesis protein	148	NA	2
J99	63062	F10	NT01HP1305	hypothetical protein	127	NA	2
J99	63067	F11	NT01HP0652	hypothetical protein	127	NA	2
J99	63070	F12	NT01HP0143	hypothetical protein	133	NA	2
J99	63075	G01	NT01HP0596	hypothetical protein	148	NA	2
J99	63079	G02	NT01HP0877	hypothetical protein	130	NA	-
J99	63083	G03	NT01HP0085	conserved hypothetical protein	145	NA	-
J99	63087	G04	NT01HP0623	hypothetical protein	127	NA	2
J99	63090	G05	NT01HP0510	hypothetical protein	142	NA	-
J99	63098	G06	NT01HP1434	hypothetical protein	151	NA	-
J99	63106	G07	NT01HP0057	adenine/cytosine DNA methyltransferase	151	NA	2

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

© 2012 American Type Culture Collection (ATCC). All rights reserved.

Strain	Clone	Well Position	Locus ID	Description (Gene name)	ORF Length	Accession Number[2]	Average Depth of Coverage
J99	63110	G08	NT01HP1112	hypothetical protein	145	NA	2
J99	63114	G09	NT01HP1262	hypothetical protein	136	NA	2
J99	63119	G10	NT01HP1509	hypothetical protein	136	NA	2
J99	63123	G11	NT01HP0487	hypothetical protein	136	NA	-
J99	63126	G12	NT01HP0092	hypothetical protein	130	NA	2
J99	63130	H01	NT01HP0494	hypothetical protein	148	NA	-
J99	63134	H02	NT01HP1176	hypothetical protein	145	NA	-
J99	63138	H03	NT01HP1254	hypothetical protein	127	NA	-
J99	63142	H04	NT01HP1367	hypothetical protein	130	NA	2
J99	63146	H05	NT01HP0125	hypothetical protein	130	NA	-
J99	63151	H06	NT01HP1227	hypothetical protein	133	NA	-
J99	63154	H07	NT01HP1622	hypothetical protein	127	NA	-
J99	63158	H08	NT01HP1634	hypothetical protein	136	NA	-
J99	63162	H09	NT01HP0396	hypothetical protein	127	NA	2
J99	63167	H10	NT01HP0769	hypothetical protein	151	NA	-
J99	63175	H11	NT01HP0746	hypothetical protein	148	NA	2
J99	63179	H12	NT01HP0027	hypothetical protein	130	NA	2

[1]All information in this table was provided by J. Craig Venter Institute at the time of deposition.

[2]Not all genes were annotated at the time this document was produced (NA – gene accession number not available).

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

© 2012 American Type Culture Collection (ATCC). All rights reserved.