

## SUPPORTING INFECTIOUS DISEASE RESEARCH

# **Product Information Sheet for NR-19499**

# Staphylococcus aureus (MRSA), Strain COL Gateway<sup>®</sup> Clone Set, Recombinant in Escherichia coli, Plate 3

## Catalog No. NR-19499

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:**

Production in the 96-well format has increased risk of crosscontamination 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.

The methicillin-resistant *Staphylococcus aureus* (*S. aureus*), strain COL Gateway<sup>®</sup> clone set consists of 25 plates which contain 2343 sequence validated clones from *S. aureus* strain COL cloned in *Escherichia coli* (*E. coli*) DH10B-T1 cells. Each open reading frame was constructed in vector pDONR™221 (Invitrogen™) with a native 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 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 60  $\mu$ L of *E. coli* culture (strain DH10B-T1) in Luria Bertani (LB) broth containing 50  $\mu$ g/mL kanamycin supplemented with 15% glycerol.

## Packaging/Storage:

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NR-19499 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:

- Scrape top of frozen well with a pipette tip and streak onto agar plate.
- 2. Incubate the plates at 37°C for 18 to 24 hours.

## Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Staphylococcus aureus* (MRSA), Strain COL Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 3, NR-19499."

## 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 <a href="https://www.beiresources.org">www.beiresources.org</a>.

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SUPPORTING INFECTIOUS DISEASE RESEARCH

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:

 Gill, S. R., et al. "Insights on Evolution of Virulence and Resistance from the Complete Genome Analysis of an Early Methicillin-Resistant *Staphylococcus aureus* Strain and a Biofilm-Producing Methicillin-Resistant *Staphylococcus epidermidis* Strain." <u>J. Bacteriol.</u> 187 (2005): 2426-2438. PubMed: 15774886.

ATCC® is a trademark of the American Type Culture Collection.

Table 1: Staphylococcus aureus, Strain COL Gateway® Clones, Plate 3 (ZSAJC)

Position   Position	Clone	Well	ORF	Locus ID	Description (Gene name)	Accession	Average Depth
455         A02         229         SACOL0359         hypothetical protein         YP 185251.1         3           457         A03         229         SACOL0912         conserved hypothetical protein         YP 186783.1         3           459         A04         229         SACOL1467         conserved hypothetical protein         YP 186199.1         2           462         A05         229         SACOL2466         hypothetical protein         YP 186315.1         2           465         A06         229         SACOL2513         hypothetical protein         YP 187097.1         3           465         A07         229         SACOL131         hypothetical protein         YP 186038.1         2           467         A08         232         SACOL1331         hypothetical protein         YP 186185.1         2           471         A10         232         SACOL1350         conserved hypothetical protein         YP 186203.1         2           473         A11         232         SACOL0329         conserved hypothetical protein         YP 185221.1         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP 185224.1         3           481         B02		Position	Length		. ,	Number	of Coverage
457							
459         A04         229         SACOL1346         hypothetical protein         YP 186199.1         2           462         A05         229         SACOL1467         conserved hypothetical protein         YP 186315.1         2           463         A06         229         SACOL2468         hypothetical protein         YP 187264.1         3           465         A07         229         SACOL2513         hypothetical protein         YP 186038.1         2           467         A08         232         SACOL1331         hypothetical protein         YP 186185.1         2           469         A09         232         SACOL1350         conserved hypothetical protein         YP 186203.1         2           471         A10         232         SACOL2447         hypothetical protein         YP 186203.1         2           473         A11         232         SACOL0329         conserved hypothetical protein         YP 185254.1         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP 185254.1         3           481         B02         235         SACOL1437         cold shock protein, CSD family         YP 185221.1         3           483         B0							
462         A05         229         SACOL1467         conserved hypothetical protein         YP_186315.1         2           463         A06         229         SACOL2513         hypothetical protein         YP_187307.1         3           465         A07         229         SACOL2513         hypothetical protein         YP_187307.1         3           467         A08         232         SACOL1375         hypothetical protein         YP_186038.1         2           469         A09         232         SACOL1330         hypothetical protein         YP_186203.1         2           471         A10         232         SACOL350         conserved hypothetical protein         N/A         3           473         A11         232         SACOL0329         conserved hypothetical protein         YP_185221.1         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP_185221.1         3           481         B02         235         SACOL0362         conserved hypothetical protein         YP_185221.1         3           481         B02         235         SACOL0316         hypothetical protein         YP_185221.1         3           483         B03							
483         A06         229         SACOL2466         hypothetical protein         YP_187264.1         3           465         A07         229         SACOL2513         hypothetical protein         YP_187307.1         3           467         A08         232         SACOL1175         hypothetical protein         YP_186038.1         2           469         A09         232         SACOL1331         hypothetical protein         YP_186203.1         2           471         A10         232         SACOL1330         conserved hypothetical protein         N/A         3           473         A11         232         SACOL0329         conserved hypothetical protein         N/A         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP_185221.1         3           481         B02         235         SACOL0362         conserved hypothetical protein         YP_185221.1         3           481         B02         235         SACOL0362         conserved hypothetical protein         YP_185782.1         2           483         B03         235         SACOL14076         rbypothetical protein         YP_185782.1         2           485         B04							2
485         A07         229         SACOL2513         hypothetical protein         YP_186038.1         3           467         A08         232         SACOL1755         hypothetical protein         YP_186038.1         2           469         A09         232         SACOL1331         hypothetical protein         YP_186203.1         2           471         A10         232         SACOL1350         conserved hypothetical protein         YP_186203.1         2           473         A11         232         SACOL0329         conserved hypothetical protein         N/A         3           475         A12         235         SACOL0329         conserved hypothetical protein         YP_185221.1         3           477         B01         235         SACOL0322         conserved hypothetical protein         YP_185221.1         3           481         B02         235         SACOL0362         conserved hypothetical protein         YP_185782.1         2           483         B03         235         SACOL1437         cold shock protein         YP_186351.1         3           485         B04         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B06							
467         A08         232         SACOL1755         hypothetical protein         VP_186038.1         2           469         A09         232         SACOL1331         hypothetical protein         VP_186185.1         2           471         A10         232         SACOL1350         conserved hypothetical protein         VP_186203.1         2           473         A11         232         SACOL0329         conserved hypothetical protein         N/A         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP_18522.1         3           481         B02         235         SACOL0911         hypothetical protein         YP_185254.1         3           481         B02         235         SACOL1931         hypothetical protein         YP_186289.1         3           483         B03         235         SACOL1437         cold shock protein, CSD family         YP_186289.1         3           485         B04         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1726         ribosomal protein         YP_186351.1         3           497         B09         238	463				hypothetical protein		
489         A09         232         SACOL1331         hypothetical protein         VP 186185.1         2           471         A10         232         SACOL1350         conserved hypothetical protein         VP 186203.1         2           473         A11         232         SACOL2447         hypothetical protein         N/A         3           475         A12         235         SACOL0329         conserved hypothetical protein         YP 185221.1         3           481         B02         235         SACOL0362         conserved hypothetical protein         YP 18524.1         3           481         B02         235         SACOL1911         hypothetical protein         YP 186289.1         3           483         B03         235         SACOL1437         cold shock protein, CSD family         YP 186289.1         3           487         B05         235         SACOL1766         ribosomal protein         YP 186531.1         3           489         B06         235         SACOL2647         hypothetical protein         YP 187435.1         3           493         B07         238         SACOL068         hypothetical protein         YP 187455.1         3           497         B09         238<					hypothetical protein		
471         A10         232         SACOL1350         conserved hypothetical protein         YP_186203.1         2           473         A11         232         SACOL2447         hypothetical protein         N/A         3           475         A12         235         SACOL0329         conserved hypothetical protein         YP_185221.1         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP_185254.1         3           481         B02         235         SACOL0911         hypothetical protein         YP_186289.1         3           483         B03         235         SACOL1437         cold shock protein, CSD family         YP_186289.1         3           485         B04         235         SACOL17507         hypothetical protein         YP_186289.1         3           487         B05         235         SACOL1726         ribosomal protein L35         YP_1865851.1         3           489         B06         235         SACOL0686         hypothetical protein         YP_187435.1         3           493         B07         238         SACOL0131         hypothetical protein         YP_185056.1         -           499         B10	467	A08	232	SACOL1175	hypothetical protein	YP_186038.1	
471         A10         232         SACOL1350         conserved hypothetical protein         YP_186203.1         2           473         A11         232         SACOL2447         hypothetical protein         N/A         3           475         A12         235         SACOL0329         conserved hypothetical protein         YP_185221.1         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP_185254.1         3           481         B02         235         SACOL0911         hypothetical protein         YP_186289.1         3           483         B03         235         SACOL1437         cold shock protein, CSD family         YP_186289.1         3           485         B04         235         SACOL17507         hypothetical protein         YP_186289.1         3           487         B05         235         SACOL1726         ribosomal protein L35         YP_1865851.1         3           489         B06         235         SACOL0686         hypothetical protein         YP_187435.1         3           493         B07         238         SACOL0131         hypothetical protein         YP_185056.1         -           499         B10	469	A09	232	SACOL1331	hypothetical protein	YP_186185.1	2
473         A11         232         SACOL2447         hypothetical protein         N/A         3           475         A12         235         SACOL0329         conserved hypothetical protein         YP 185221.1         3           477         B01         235         SACOL0362         conserved hypothetical protein         YP 185782.1         2           481         B02         235         SACOL1437         cold shock protein. CSD family         YP 186289.1         3           485         B04         235         SACOL1507         hypothetical protein         YP 186351.1         3           487         B05         235         SACOL1726         ribosomal protein L35         YP 1863564.1         -           489         B06         235         SACOL2647         hypothetical protein         YP 184973.1         3           493         B07         238         SACOL068         hypothetical protein         YP 184973.1         3           497         B09         238         SACOL0131         hypothetical protein         YP 185252.1         3           497         B09         238         SACOL0360         hypothetical protein         YP 185252.1         3           497         B09         238	471	A10	232	SACOL1350	conserved hypothetical protein	YP_186203.1	2
477         B01         235         SACOL0362         conserved hypothetical protein         VP_185254.1         3           481         B02         235         SACOL0911         hypothetical protein         YP_186289.1         3           483         B03         235         SACOL1437         cold shock protein, CSD family         YP_186289.1         3           485         B04         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1647         hypothetical protein         YP_187435.1         3           493         B07         238         SACOL068         hypothetical protein         YP_184973.1         3           497         B09         238         SACOL0131         hypothetical protein         YP_185056.1         -           499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/CI family         YP_185252.1         3           503         B12	473	A11	232	SACOL2447			3
477         B01         235         SACOL0362         conserved hypothetical protein         VP_185254.1         3           481         B02         235         SACOL0911         hypothetical protein         YP_186289.1         3           483         B03         235         SACOL1437         cold shock protein, CSD family         YP_186289.1         3           485         B04         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1647         hypothetical protein         YP_187435.1         3           493         B07         238         SACOL068         hypothetical protein         YP_184973.1         3           497         B09         238         SACOL0131         hypothetical protein         YP_185056.1         -           499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/CI family         YP_185252.1         3           503         B12	475	A12	235	SACOL0329	conserved hypothetical protein	YP_185221.1	3
483         B03         235         SACOL1437         cold shock protein, CSD family         YP_186289.1         3           485         B04         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1726         ribosomal protein 135         YP_186564.1         -           489         B06         235         SACOL2647         hypothetical protein         YP_184735.1         3           493         B07         238         SACOL068         hypothetical protein         N/A         3           495         B08         238         SACOL0131         hypothetical protein         N/A         3           497         B09         238         SACOL0360         hypothetical protein         YP_185056.1         -           499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/CI family         YP_185312.1         1.957983193           503         B12         238         SACOL0677         conserved hypothetical protein         YP_185326.1         3           507         C02         <	477	B01					3
483         B03         235         SACOL1437         cold shock protein, CSD family         YP_186289.1         3           485         B04         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1726         ribosomal protein 135         YP_186564.1         -           489         B06         235         SACOL2647         hypothetical protein         YP_184735.1         3           493         B07         238         SACOL068         hypothetical protein         N/A         3           495         B08         238         SACOL0131         hypothetical protein         N/A         3           497         B09         238         SACOL0360         hypothetical protein         YP_185056.1         -           499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/CI family         YP_185312.1         1.957983193           503         B12         238         SACOL0677         conserved hypothetical protein         YP_185326.1         3           507         C02         <	481	B02	235	SACOL0911	hypothetical protein	YP 185782.1	2
485         B04         235         SACOL1507         hypothetical protein         YP_186351.1         3           487         B05         235         SACOL1726         ribosomal protein L35         YP_186564.1         -           489         B06         235         SACOL2647         hypothetical protein         YP_187435.1         3           493         B07         238         SACOL0068         hypothetical protein         YP_184973.1         3           495         B08         238         SACOL0131         hypothetical protein         N/A         3           497         B09         238         SACOL0360         hypothetical protein         YP_185056.1         -           498         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/Cl family         YP_185312.1         1.957983193           503         B12         238         SACOL0677         conserved hypothetical protein         YP_185360.1         2           507         C02         238         SACOL1127         hypothetical protein         YP_185991.1         3           509         C03 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
487         B05         235         SACOL1726         ribosomal protein L35         YP_186564.1         -           489         B06         235         SACOL2647         hypothetical protein         YP_187435.1         3           493         B07         238         SACOL0068         hypothetical protein         YP_184973.1         3           495         B08         238         SACOL0131         hypothetical protein         N/A         3           497         B09         238         SACOL0360         hypothetical protein         YP_185056.1         -           499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/Cl family         YP_185312.1         1.957983193           503         B12         238         SACOL0434         conserved hypothetical protein         YP_185322.1         3           505         C01         238         SACOL147         conserved hypothetical protein         YP_185560.1         2           507         C02         238         SACOL1446         conserved hypothetical protein         YP_186298.1         2           511	485	B04					
489         B06         235         SACOL2647         hypothetical protein         YP_187435.1         3           493         B07         238         SACOL0068         hypothetical protein         YP_184973.1         3           495         B08         238         SACOL0131         hypothetical protein         N/A         3           497         B09         238         SACOL0166         hypothetical protein         YP_185056.1         -           499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/Cl family         YP_185252.1         3           503         B12         238         SACOL0434         conserved hypothetical protein         YP_185325.1         3           505         C01         238         SACOL147         conserved hypothetical protein         YP_185991.1         3           509         C03         238         SACOL146         conserved hypothetical protein         YP_186998.1         2           511         C04         238         SACOL2547         hypothetical protein         YP_186445.1         3           515         C06	487	B05					
493         B07         238         SACOL0068         hypothetical protein         YP_184973.1         3           495         B08         238         SACOL0131         hypothetical protein         N/A         3           497         B09         238         SACOL0366         hypothetical protein         YP_185056.1         -           499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/CI family         YP_185312.1         1.957983193           503         B12         238         SACOL0434         conserved hypothetical protein         YP_185325.1         3           505         C01         238         SACOL0677         conserved hypothetical protein         YP_185991.1         3           509         C03         238         SACOL1427         hypothetical protein         YP_186298.1         2           511         C04         238         SACOL1605         conserved hypothetical protein         YP_186298.1         2           514         C05         238         SACOL2547         hypothetical protein         YP_187339.1         2           518						YP 187435.1	3
B08   238   SACOL0131   hypothetical protein   N/A   3							
B09   238							
499         B10         238         SACOL0360         hypothetical protein         YP_185252.1         3           502         B11         238         SACOL0420         transcriptional regulator, Cro/Cl family         YP_185312.1         1.957983193           503         B12         238         SACOL0434         conserved hypothetical protein         YP_185325.1         3           505         C01         238         SACOL0677         conserved hypothetical protein         YP_18590.1         2           507         C02         238         SACOL1127         hypothetical protein         YP_185991.1         3           509         C03         238         SACOL1446         conserved hypothetical protein         YP_186298.1         2           511         C04         238         SACOL1605         conserved hypothetical protein         YP_186445.1         3           514         C05         238         SACOL2141         site-specific recombinase family protein, degenerate         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         YP_185244.1         1.983193							
502         B11         238         SACOL0420         transcriptional regulator, Cro/CI family         YP_185312.1         1.957983193           503         B12         238         SACOL0434         conserved hypothetical protein         YP_185325.1         3           505         C01         238         SACOL0677         conserved hypothetical protein         YP_185560.1         2           507         C02         238         SACOL1127         hypothetical protein         YP_185991.1         3           509         C03         238         SACOL1446         conserved hypothetical protein         YP_186298.1         2           511         C04         238         SACOL1605         conserved hypothetical protein         YP_186445.1         3           514         C05         238         SACOL2547         hypothetical protein         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2547         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL352         hypothetical protein         YP_185244.1         1.98340249							3
503         B12         238         SACOL0434         conserved hypothetical protein         YP_185325.1         3           505         C01         238         SACOL0677         conserved hypothetical protein         YP_185560.1         2           507         C02         238         SACOL1127         hypothetical protein         YP_185991.1         3           509         C03         238         SACOL1446         conserved hypothetical protein         YP_186298.1         2           511         C04         238         SACOL1605         conserved hypothetical protein         YP_186445.1         3           514         C05         238         SACOL2141         site-specific recombinase family protein, degenerate         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL0352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL1333         hypothetical protein         YP_186187.1         2							
505         C01         238         SACOL0677         conserved hypothetical protein         YP_185560.1         2           507         C02         238         SACOL1127         hypothetical protein         YP_185991.1         3           509         C03         238         SACOL1446         conserved hypothetical protein         YP_186298.1         2           511         C04         238         SACOL1605         conserved hypothetical protein         YP_186445.1         3           514         C05         238         SACOL2141         site-specific recombinase family protein, degenerate         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL358         conserved hypothetical protein         YP_186371.1         2           523         C10         241         SACOL1323         hypothetical protein         YP_186763.1         1.98340249							
507         C02         238         SACOL1127         hypothetical protein         YP_185991.1         3           509         C03         238         SACOL1446         conserved hypothetical protein         YP_186298.1         2           511         C04         238         SACOL1605         conserved hypothetical protein         YP_186445.1         3           514         C05         238         SACOL2141         site-specific recombinase family protein, degenerate         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL0352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL0358         conserved hypothetical protein         YP_186187.1         2           523         C10         241         SACOL1333         hypothetical protein         YP_186371.1         3           525         C11         241         SACOL1529         hypothetical protein         YP_186763.1         1.98340249							2
509         C03         238         SACOL1446         conserved hypothetical protein         YP_186298.1         2           511         C04         238         SACOL1605         conserved hypothetical protein         YP_186445.1         3           514         C05         238         SACOL2141         site-specific recombinase family protein, degenerate         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL2586         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL0352         hypothetical protein         YP_185250.1         -           523         C10         241         SACOL1333         hypothetical protein         YP_186187.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_18663.1         1.98340249							
511         C04         238         SACOL1605         conserved hypothetical protein         YP_186445.1         3           514         C05         238         SACOL2141         site-specific recombinase family protein, degenerate         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL0352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL0358         conserved hypothetical protein         YP_185250.1         -           523         C10         241         SACOL1333         hypothetical protein         YP_186371.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1338         conserved hypothetical protein         YP_187365.1         3           529         D01         241         SACOL2573         conserved hypothetical protein         YP_18693.1         2	509	C03			conserved hypothetical protein	YP 186298.1	2
514         C05         238         SACOL2141         site-specific recombinase family protein, degenerate         N/A         1.983193277           515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL0352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL0358         conserved hypothetical protein         YP_185250.1         -           523         C10         241         SACOL1333         hypothetical protein         YP_186187.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2231         ribosomal protein L29         YP_186983.1         2							
515         C06         238         SACOL2547         hypothetical protein         YP_187339.1         2           518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL0352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL0358         conserved hypothetical protein         YP_185250.1         -           523         C10         241         SACOL1333         hypothetical protein         YP_186187.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186915.1         -           541 <td>514</td> <td>C05</td> <td>238</td> <td>SACOL2141</td> <td></td> <td>N/A</td> <td>1.983193277</td>	514	C05	238	SACOL2141		N/A	1.983193277
518         C07         238         SACOL2586         hypothetical protein         N/A         1.983193277           520         C08         241         SACOL0352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL0358         conserved hypothetical protein         YP_185250.1         -           523         C10         241         SACOL1333         hypothetical protein         YP_186187.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186915.1         -           541 <td>515</td> <td>C06</td> <td>238</td> <td>SACOL2547</td> <td></td> <td>YP 187339.1</td> <td>2</td>	515	C06	238	SACOL2547		YP 187339.1	2
520         C08         241         SACOL0352         hypothetical protein         YP_185244.1         1.98340249           521         C09         241         SACOL0358         conserved hypothetical protein         YP_185250.1         -           523         C10         241         SACOL1333         hypothetical protein         YP_186187.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186915.1         -           539         D05         247         SACOL266         conserved hypothetical protein         YP_187415.1         3							1.983193277
521         C09         241         SACOL0358         conserved hypothetical protein         YP_185250.1         -           523         C10         241         SACOL1333         hypothetical protein         YP_186187.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186915.1         -           539         D05         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							
523         C10         241         SACOL1333         hypothetical protein         YP_186187.1         2           525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL2231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186081.1         -           539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							
525         C11         241         SACOL1529         hypothetical protein         YP_186371.1         3           528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL2231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186081.1         -           539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							2
528         C12         241         SACOL1938         conserved hypothetical protein         YP_186763.1         1.98340249           529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL2231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186081.1         -           539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							
529         D01         241         SACOL2573         copper ion binding protein         YP_187365.1         3           533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL2231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186081.1         -           539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							
533         D02         244         SACOL2077         conserved hypothetical protein         YP_186893.1         2           535         D03         244         SACOL2231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186081.1         -           539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							
535         D03         244         SACOL2231         ribosomal protein L29         YP_187041.1         -           537         D04         247         SACOL1218         conserved hypothetical protein         YP_186081.1         -           539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							2
537         D04         247         SACOL1218         conserved hypothetical protein         YP_186081.1         -           539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3						YP 187041.1	
539         D05         247         SACOL2100         ATP synthase F0, C subunit         YP_186915.1         -           541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							
541         D06         247         SACOL2626         conserved hypothetical protein         YP_187415.1         3							
	543	D07	247	SACOL2695	hypothetical protein	YP_187481.1	3

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SUPPORTING INFECTIOUS DISEASE RESEARCH

# **Product Information Sheet for NR-19499**

Position   Position	Clone	Well Position	ORF	Locus ID	Description (Gene name)	Accession	Average Depth
551         D09         253         SACCIU0285         conserved hypothetical protein         VP. 185180.1         3           554         D10         253         SACOL0382         prophage L548, Chro-leated protein         VP. 185735.1         -           555         D11         253         SACOL0930         pathogenicity island protein         VP. 185735.1         -           559         E01         253         SACOL1030         pathogenicity island protein         VP. 185888.1         -           561         E02         253         SACOL1099         conserved hypothetical protein         VP. 185883.1         2           563         E03         253         SACOL1222         DNA-directed RNA polymerase, omega subunit         VP. 18693.1         2           567         E05         253         SACOL2217         translation initiation fractor IF-1         VP. 18693.1         2           567         E05         253         SACOL3337         hypothetical protein         VP. 187349.1         2           571         E07         256         SACOL0337         hypothetical protein         VP. 187349.1         2           573         E08         256         SACOL0337         hypothetical protein         VP. 18529.1         -	F 4 0		Length	CACOL 1206		Number	of Coverage
555							
555   D11   253   SACOL0862   hypothetical protein   YP_185735.1   - 557   D12   253   SACOL0903   pathogenicity listed protein   YP_18599.1   - 559   E01   253   SACOL033   hypothetical protein   YP_18599.1   - 559   E02   253   SACOL1099   conserved hypothetical protein   YP_18599.1   - 559   E02   253   SACOL1222   DNA-directed RNA polymerase, omega subunit   YP_186490.1   2   2   2   2   2   2   2   2   2							
557   D12   253   SACOL0903   pathogenicity island protein   YP   185774.1   -							1.000324111
559         E01         253         SACOL 1033         hypothetical protein         YP_185898.1         -           561         E02         253         SACOL 1222         DNA-directed RNA polymerase, omega subunit         YP_186085.1         -           565         E04         253         SACOL 1590         conserved hypothetical protein         YP_186085.1         -           567         E05         253         SACOL 2596         conserved hypothetical protein         YP_187027.1         2           569         E06         253         SACOL 2596         conserved hypothetical protein         YP_187349.1         2           571         E07         226         SACOL 2596         conserved hypothetical protein         YP_185229.1         -           573         E08         228         SACOL 2596         conserved hypothetical protein         YP_185237.1         3           576         E09         256         SACOL 2596         conserved hypothetical protein         YP_18529.1         2           577         E10         256         SACOL 1326         conserved hypothetical protein         YP_185218.1         2           579         E11         259         SACOL 1332         hypothetical protein         YP_185218.1         2							-
Fig. 1							-
563         E03         253         SACOL1222         DNA-directed RNA polymerase, omega subunit         YP_18695.1         -           567         E04         253         SACOL1569         conserved hypothetical protein         YP_187027.1         2           567         E05         253         SACOL2576         translation initiation factor IF-1         YP_187027.1         2           569         E06         253         SACOL0337         hypothetical protein         YP_185228.1         2           577         E07         256         SACOL0337         hypothetical protein         YP_185228.1         3           573         E08         256         SACOL0345         hypothetical protein         YP_185228.1         3           577         E10         256         SACOL0336         hypothetical protein         YP_185309.1         2           577         E10         256         SACOL1466         conserved hypothetical protein         YP_186307.1         -           579         E11         259         SACOL0676         conserved hypothetical protein         YP_185218.1         2           581         E12         259         SACOL1326         conserved hypothetical protein         YP_186595.1         - <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td></t<>							2
565         E04         253         SACOL1590         conserved hypothetical protein         YP 18630.1         2           567         E05         253         SACOL2556         translation initiation factor 1-1         YP 187349.1         2           569         E06         253         SACOL2556         conserved hypothetical protein         YP 187349.1         2           571         E07         256         SACOL0345         hypothetical protein         YP 18529.1         -           576         E09         256         SACOL0345         hypothetical protein         YP 18509.1         2           577         E10         256         SACOL1456         conserved hypothetical protein         YP 18509.1         2           577         E11         259         SACOL0326         hypothetical protein         YP 185218.1         2           581         E12         259         SACOL1322         hypothetical protein         YP 186186.1         1.965250965           587         F02         259         SACOL2033         conserved hypothetical protein         YP 186868.1         -           589         F03         259         SACOL2033         conserved hypothetical protein         YP 186868.1         -           593<							
567         E05         253         SACOL2217         translation initiation factor IF-1         YP_187027.1         2           569         E06         253         SACOL2556         conserved hypothetical protein         YP_187349.1         2           571         E07         258         SACOL0337         hypothetical protein         YP_18529.1         -           573         E08         256         SACOL0345         hypothetical protein         YP_185037.1         3           576         E09         256         SACOL0393         NIVI domain protein         YP_18509.1         2           577         E10         256         SACOL0326         conserved hypothetical protein         YP_18509.1         -           579         E11         259         SACOL0326         conserved hypothetical protein         YP_18559.1         -           581         E12         259         SACOL1332         hypothetical protein         YP_186186.1         1_965259965           587         F02         259         SACOL1826         conserved hypothetical protein         YP_186580.1         -           589         F03         259         SACOL1826         conserved hypothetical protein         YP_186580.1         -           599<							
589         E06         253         SACOL2566         conserved hypothetical protein         YP, 187349.1         2           571         E07         256         SACOL0345         hypothetical protein         YP 185229.1         -           576         E08         256         SACOL0345         hypothetical protein         YP 185297.1         3           577         E10         256         SACOL1456         conserved hypothetical protein         YP 185809.1         -           579         E11         259         SACOL0326         hypothetical protein         YP 185591.1         -           581         E12         259         SACOL0326         hypothetical protein         YP 185591.1         -           588         F01         259         SACOL1322         hypothetical protein         YP 186868.1         1,965250965           587         F02         259         SACOL1826         conserved hypothetical protein         YP 186850.1         -           589         F03         259         SACOL1826         conserved hypothetical protein         YP 186712.1         2           593         F03         262         SACOL1868         hypothetical protein         YP 186712.1         2           599         F					7.		
571         E07         256         SACOL0337         hypothetical protein         YP 185229.1         -           573         E08         256         SACOL0939         NiI'U domain protein         YP 185809.1         2           577         E10         256         SACOL0939         NiI'U domain protein         YP 186809.1         2           577         E10         256         SACOL0326         hypothetical protein         YP 186307.1         -           579         E11         259         SACOL0326         hypothetical protein         YP 185218.1         2           581         E12         259         SACOL0320         hypothetical protein         YP 1865859.1         -           586         F01         259         SACOL1332         hypothetical protein         YP 186586.1         -           587         F02         259         SACOL1332         hypothetical protein         YP 186586.1         -           589         F03         259         SACOL233         conserved hypothetical protein         YP 186712.1         2           591         F04         262         SACOL328         hypothetical protein         YP 185212.1         2           593         F05         262         S							
573         E08         256         SACOL0345         hypothetical protein         YP, 185237,1         3           576         E09         256         SACOL0399         NifU domain protein         YP 185809,1         2           577         E10         256         SACOL1456         conserved hypothetical protein         YP 186307,1         -           579         E11         259         SACOL0326         hypothetical protein         YP 186559,1         -           581         E12         259         SACOL0326         hypothetical protein         YP 186186,1         1,965250965           586         F01         259         SACOL1332         hypothetical protein         YP 186818,1         1,965250965           587         F02         259         SACOL2033         conserved hypothetical protein         YP 186818,1         -           589         F03         259         SACOL2033         conserved hypothetical protein         YP 186851,1         -           593         F06         262         SACOL1868         hypothetical protein         YP 187357,1         2           599         F07         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP 186948,1         2           603<							
S776   E09   256   SACOLD939   NitU domain protein   YP 185809.1   2							3
577         E10         256         SACOL1456         conserved hypothetical protein         YP_185218.1         -           579         E11         259         SACOL0326         hypothetical protein         YP_185518.1         2           581         E12         259         SACOL0676         conserved hypothetical protein         YP_186559.1         -           586         F01         259         SACOL1322         hypothetical protein         YP_186686.1         -           587         F02         259         SACOL333         conserved hypothetical protein         YP_186658.1         -           589         F03         259         SACOL2333         conserved hypothetical protein         YP_186712.1         2           591         F04         262         SACOL386         hypothetical protein         YP_186712.1         2           593         F05         262         SACOL1866         hypothetical protein         YP_186712.1         2           599         F07         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP_186735.1         2           603         F08         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP_186735.1         2           <							
579         E11         259         SACOL0326         hypothetical protein         YP, 185218.1         2           581         E12         259         SACOL0676         conserved hypothetical protein         YP, 18659.1         -           586         F01         259         SACOL1322         hypothetical protein         YP, 186688.1         -           587         F02         259         SACOL2032         conserved hypothetical protein         YP, 186858.1         -           589         F03         259         SACOL2030         conserved hypothetical protein         YP, 186712.1         2           591         F04         262         SACOL1886         hypothetical protein         YP, 187357.1         2           595         F06         262         SACOL2565         FeoA domain protein         YP, 187357.1         2           599         F07         265         SACOL2565         FeoA domain protein         YP, 186408.1         2           603         F08         265         SACOL2144         conserved hypothetical protein         YP, 186408.1         2           605         F09         265         SACOL2589         conserved hypothetical protein         YP, 187300.1         2           607							
581         E12         259         SACOL1676         conserved hypothetical protein         YP 185559.1         -           586         F01         259         SACOL1332         hypothetical protein         YP 186186.1         1.965250965           587         F02         259         SACOL1326         conserved hypothetical protein         YP 186850.1         -           589         F03         259         SACOL2033         conserved hypothetical protein         YP 186850.1         -           591         F04         262         SACOL3020         hypothetical protein         YP 186521.1         2           593         F05         262         SACOL1866         hypothetical protein         YP 187357.1         2           595         F06         262         SACOL2565         Feo Adomain protein         YP 187357.1         2           599         F07         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP 186949.1         2           605         F09         265         SACOL2589         conserved hypothetical protein         YP 186949.1         2           607         F10         268         SACOL1289         conserved hypothetical protein         YP 186949.1         2							2
586         F01         259         SACOL1332         hypothetical protein         YP 186186.1         1.965250965           587         F02         259         SACOL1826         conserved hypothetical protein         YP 186658.1         -           589         F03         259         SACOL2032         conserved hypothetical protein         YP 186212.1         2           591         F04         262         SACOL320         hypothetical protein         YP 186712.1         2           593         F05         262         SACOL1886         hypothetical protein         YP 18737.1         2           595         F06         262         SACOL1567         exodeoxyribonuclease VII, small subunit         YP 186941.1         2           603         F08         265         SACOL2589         conserved hypothetical protein         YP 186941.1         2           607         F10         268         SACOL1884         preprotein translocase, SecG subunit         YP 187380.1         2           607         F10         268         SACOL194         preprotein translocase, SecG subunit         YP 186095.1         2           611         F12         268         SACOL194         preprotein translocase, SecG subunit         YP 186035.1         2							
587         F02         259         SACOL1826         conserved hypothetical protein         YP _ 186658.1         -           589         F03         259         SACOL2033         conserved hypothetical protein         YP _ 186712.1         2           591         F04         262         SACOL320         hypothetical protein         YP _ 185712.1         2           593         F05         262         SACOL4866         hypothetical protein         YP _ 186712.1         2           595         F06         262         SACOL565         Feo Adomain protein         YP _ 186792.1         2           599         F07         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP _ 186499.1         2           603         F08         265         SACOL2589         conserved hypothetical protein         YP _ 186949.1         2           605         F09         2265         SACOL2589         conserved hypothetical protein         YP _ 185718.1         2           607         F10         268         SACOL1093         conserved hypothetical protein         YP _ 185957.1         2           611         F12         268         SACOL1172         hypothetical protein         YP _ 186107.1         2 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>1 965250965</td></tr<>							1 965250965
589         FO3         259         SACOL2033         conserved hypothetical protein         YP_186850.1         -           591         FO4         262         SACOL320         hypothetical protein         YP_185212.1         2           593         F05         262         SACOL1886         hypothetical protein         YP_187357.1         2           599         F07         265         SACOL2565         FeoA domain protein         YP_187387.1         2           603         F08         265         SACOL2567         exodeoxyribonuclease VII, small subunit         YP_186949.1         2           603         F08         265         SACOL2589         conserved hypothetical protein         YP_186949.1         2           605         F09         265         SACOL2589         conserved hypothetical protein         YP_185949.1         2           607         F10         268         SACOL1093         conserved hypothetical protein         YP_185957.1         2           611         F12         268         SACOL1172         hypothetical protein         YP_185957.1         2           611         F12         268         SACOL1172         hypothetical protein         YP_1861957.1         2           613							1.905250905
591         F04         262         SACOL0320         hypothetical protein         YP_186712.1         2           593         F05         262         SACOL1886         hypothetical protein         YP_187357.1         2           599         F07         265         SACOL2565         FeoA domain protein         YP_187357.1         2           599         F07         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP_186408.1         2           603         F08         265         SACOL2539         conserved hypothetical protein         YP_186949.1         2           605         F09         265         SACOL1589         conserved hypothetical protein         YP_187380.1         2           607         F10         268         SACOL10844         preprotein translocase, SecG subunit         YP_185718.1         2           609         F11         268         SACOL1093         conserved hypothetical protein         YP_185718.1         2           611         F12         268         SACOL1247         acyl carrier protein         YP_18607.1         2           613         G01         268         SACOL1375         conserved hypothetical protein         YP_186107.1         2 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td></td<>							_
593         F05         262         SACOL1886         hypothetical protein         YP_186712.1         2           595         F06         262         SACOL2565         FeoA domain protein         YP_187357.1         2           599         F07         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP_186408.1         2           603         F08         265         SACOL134         conserved hypothetical protein         YP_186949.1         2           605         F09         265         SACOL2589         conserved hypothetical protein         YP_187380.1         2           607         F10         268         SACOL1093         conserved hypothetical protein         YP_185795.1         2           609         F11         268         SACOL1093         conserved hypothetical protein         YP_185957.1         2           611         F12         268         SACOL1724         protein         YP_186035.1         2           613         G01         268         SACOL1324         RNA chaperone Hfq         YP_186035.1         2           617         G03         268         SACOL1325         RNA chaperone Hfq         YP_186035.1         2           617         G03							2
Fo6							
599         F07         265         SACOL1567         exodeoxyribonuclease VII, small subunit         YP_186408.1         2           603         F08         265         SACOL2134         conserved hypothetical protein         YP_186349.1         2           605         F09         265         SACOL2589         conserved hypothetical protein         YP_187380.1         2           607         F10         268         SACOL10844         preprotein translocase, SecG subunit         YP_185718.1         2           609         F11         268         SACOL1093         conserved hypothetical protein         YP_186957.1         2           611         F12         268         SACOL1172         hypothetical protein         YP_186951.1         2           613         G01         268         SACOL1324         acyl carrier protein         YP_186107.1         2           615         G02         268         SACOL1375         conserved hypothetical protein         YP_18628.1         -           619         G04         268         SACOL263         conserved hypothetical protein         YP_186998.1         2           621         G05         268         SACOL2263         molybdopterin converting factor, subunit 1         YP_187070.1         2 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
603         F08         265         SACOL2134         conserved hypothetical protein         YP_186949.1         2           605         F09         265         SACOL2589         conserved hypothetical protein         YP_187380.1         2           607         F10         288         SACOL1093         conserved hypothetical protein         YP_185957.1         2           609         F11         268         SACOL1093         conserved hypothetical protein         YP_185957.1         2           611         F12         288         SACOL1172         hypothetical protein         YP_186035.1         2           613         G01         268         SACOL1247         acyl carrier protein         YP_186179.1         2           615         G02         288         SACOL1324         RNA chaperone Hfq         YP_186179.1         2           617         G03         268         SACOL2033         conserved hypothetical protein         YP_186228.1         -           619         G04         268         SACOL2033         conserved hypothetical protein         YP_186998.1         2           621         G05         268         SACOL263         molybdopterin converting factor, submit 1         YP_187070.1         2							
605         F09         265         SACOL2589         conserved hypothetical protein         YP_187380.1         2           607         F10         268         SACOL0844         preprotein translocase, SecG subunit         YP_185757.1         2           609         F11         268         SACOL1093         conserved hypothetical protein         YP_186035.1         2           611         F12         268         SACOL1247         hypothetical protein         YP_186035.1         2           613         G01         268         SACOL1247         acyl carrier protein         YP_186107.1         2           615         G02         268         SACOL1375         conserved hypothetical protein         YP_186179.1         2           617         G03         268         SACOL1375         conserved hypothetical protein         YP_186928.1         -           619         G04         268         SACOL2033         conserved hypothetical protein         YP_186908.1         2           621         G05         268         SACOL2263         molybdopterin converting factor, submit 1         YP_185248.1         -           623         G06         271         SACOL0366         conserved hypothetical protein         YP_185248.1         - <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
607         F10         268         SACOL0844         preprotein translocase, SecG subunit         YP_18578.1         2           609         F11         268         SACOL1093         conserved hypothetical protein         YP_185957.1         2           611         F12         268         SACOL1172         hypothetical protein         YP_186035.1         2           613         G01         268         SACOL1247         acyl carrier protein         YP_186107.1         2           615         G02         268         SACOL1324         RNA chaperone Hfg         YP_186179.1         2           617         G03         268         SACOL1375         conserved hypothetical protein         YP_186228.1         -           619         G04         268         SACOL2033         conserved hypothetical protein         YP_186908.1         2           621         G05         268         SACOL263         molybdopterin converting factor, subunit 1         YP_187070.1         2           623         G06         271         SACOL0366         conserved hypothetical protein         YP_185248.1         -           627         G08         271         SACOL0822         conserved hypothetical protein         YP_185696.1         2							
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611         F12         268         SACOL1172         hypothetical protein         YP_186035.1         2           613         G01         268         SACOL1247         acyl carrier protein         YP_186107.1         2           615         G02         268         SACOL1324         RNA chaperone Hfq         YP_186179.1         2           617         G03         268         SACOL1375         conserved hypothetical protein         YP_186228.1         -           619         G04         268         SACOL293         conserved hypothetical protein         YP_186908.1         2           621         G05         268         SACOL263         molybdopterin converting factor, subunit 1         YP_187070.1         2           623         G06         271         SACOL0356         conserved hypothetical protein         YP_185248.1         -           625         G07         271         SACOL0822         conserved hypothetical protein         YP_185696.1         2           627         G08         271         SACOL0882         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0868         conserved hypothetical protein         YP_1859696.1         2							
613         G01         268         SACOL1247         acyl carrier protein         YP_186107.1         2           615         G02         268         SACOL1324         RNA chaperone Hfq         YP_186179.1         2           617         G03         268         SACOL1375         conserved hypothetical protein         YP_186228.1         -           619         G04         268         SACOL2093         conserved hypothetical protein         YP_186908.1         2           621         G05         268         SACOL263         molybdopterin converting factor, subunit 1         YP_187070.1         2           623         G06         271         SACOL0356         conserved hypothetical protein         YP_185248.1         -           625         G07         271         SACOL0822         conserved hypothetical protein         YP_185696.1         2           627         G08         271         SACOL0822         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185811.1         -           633         G10         274         SACOL0027         conserved hypothetical protein         YP_186985.1         2 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
615         G02         268         SACOL1324         RNA chaperone Hfq         YP_186179.1         2           617         G03         268         SACOL1375         conserved hypothetical protein         YP_186228.1         -           619         G04         268         SACOL293         conserved hypothetical protein         YP_186908.1         2           621         G05         268         SACOL263         molybdopterin converting factor, subunit 1         YP_187070.1         2           623         G06         271         SACOL0366         conserved hypothetical protein         YP_185248.1         -           625         G07         271         SACOL0822         conserved hypothetical protein         YP_18596.1         2           627         G08         271         SACOL0868         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185740.1         -           633         G10         274         SACOL0942         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2 <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td>						_	
617         G03         268         SACOL1375         conserved hypothetical protein         YP_186228.1         -           619         G04         268         SACOL2933         conserved hypothetical protein         YP_186908.1         2           621         G05         268         SACOL2263         molybdopterin converting factor, subunit 1         YP_187070.1         2           623         G06         271         SACOL0356         conserved hypothetical protein         YP_185248.1         -           625         G07         271         SACOL0822         conserved hypothetical protein         YP_185696.1         2           627         G08         271         SACOL0822         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185811.1         -           633         G10         274         SACOL0027         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_18596.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185330.1							
619         G04         268         SACOL2093         conserved hypothetical protein         YP_186908.1         2           621         G05         268         SACOL2263         molybdopterin converting factor, subunit 1         YP_187070.1         2           623         G06         271         SACOL0356         conserved hypothetical protein         YP_185248.1         -           625         G07         271         SACOL0822         conserved hypothetical protein         YP_185696.1         2           627         G08         271         SACOL0868         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185740.1         -           633         G10         274         SACOL0942         conserved hypothetical protein         YP_185740.1         -           637         G11         274         SACOL0027         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0374         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185233.1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
621         G05         268         SACOL2263         molybdopterin converting factor, subunit 1         YP_187070.1         2           623         G06         271         SACOL0356         conserved hypothetical protein         YP_185248.1         -           625         G07         271         SACOL0822         conserved hypothetical protein         YP_18596.1         2           627         G08         271         SACOL0868         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185811.1         -           633         G10         274         SACOL0027         conserved hypothetical protein         YP_184938.1         -           637         G11         274         SACOL2174         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL1378         conserved hypothetical protein         YP_186231.1							
623         G06         271         SACOL0356         conserved hypothetical protein         YP_185248.1         -           625         G07         271         SACOL0822         conserved hypothetical protein         YP_185696.1         2           627         G08         271         SACOL0868         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185811.1         -           633         G10         274         SACOL027         conserved hypothetical protein         YP_184938.1         -           637         G11         274         SACOL02174         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278							
625         G07         271         SACOL0822         conserved hypothetical protein         YP_185696.1         2           627         G08         271         SACOL0868         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185811.1         -           633         G10         274         SACOL0027         conserved hypothetical protein         YP_184938.1         -           637         G11         274         SACOL2174         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0327         hypothetical protein         YP_185219.1         2							
627         G08         271         SACOL0868         conserved hypothetical protein         YP_185740.1         -           631         G09         271         SACOL0942         conserved hypothetical protein         YP_185811.1         -           633         G10         274         SACOL0027         conserved hypothetical protein         YP_184938.1         -           637         G11         274         SACOL2174         conserved hypothetical protein         YP_18595.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0032         conserved hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0327         hypothetical protein         YP_185218.1         2							
631         G09         271         SACOL0942         conserved hypothetical protein         YP_185811.1         -           633         G10         274         SACOL0027         conserved hypothetical protein         YP_184938.1         -           637         G11         274         SACOL2174         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0327         hypothetical protein         YP_185219.1         2           650         H05         280         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186386.1         -							
633         G10         274         SACOL0027         conserved hypothetical protein         YP_184938.1         -           637         G11         274         SACOL2174         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0003         conserved hypothetical protein         YP_184914.1         2           650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL1340         hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1525         ferredoxin         YP_186368.1         -           661						_	
637         G11         274         SACOL2174         conserved hypothetical protein         YP_186985.1         2           639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0003         conserved hypothetical protein         YP_184914.1         2           650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186368.1         -           661         H09         283         SACOL1525         ferredoxin         YP_186386.1         2           663							_
639         G12         277         SACOL0274         conserved hypothetical protein         YP_185169.1         2           641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0003         conserved hypothetical protein         YP_184914.1         2           650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186368.1         -           659         H08         283         SACOL1525         ferredoxin         YP_186386.1         2           661         H09         283         SACOL0332         conserved hypothetical protein         YP_185336.1         2           665							2
641         H01         277         SACOL0351         conserved hypothetical protein         YP_185243.1         2           644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0003         conserved hypothetical protein         YP_184914.1         2           650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186194.1         2           659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185336.1         2           665         H					7.		
644         H02         277         SACOL0439         ribosomal protein S18         YP_185330.1         2           646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0003         conserved hypothetical protein         YP_184914.1         2           650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186194.1         2           659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185336.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
646         H03         277         SACOL1378         conserved hypothetical protein         YP_186231.1         1.642599278           647         H04         280         SACOL0003         conserved hypothetical protein         YP_184914.1         2           650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186194.1         2           659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185336.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
647         H04         280         SACOL0003         conserved hypothetical protein         YP_184914.1         2           650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186194.1         2           659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185224.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
650         H05         280         SACOL0327         hypothetical protein         YP_185219.1         2           653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186194.1         2           659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185224.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
653         H06         283         SACOL0530         conserved hypothetical protein         YP_185418.1         2           657         H07         283         SACOL1340         hypothetical protein         YP_186194.1         2           659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185224.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
657         H07         283         SACOL1340         hypothetical protein         YP_186194.1         2           659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185224.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
659         H08         283         SACOL1525         ferredoxin         YP_186368.1         -           661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185224.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
661         H09         283         SACOL1544         hypothetical protein         YP_186386.1         2           663         H10         286         SACOL0332         conserved hypothetical protein         YP_185224.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
663         H10         286         SACOL0332         conserved hypothetical protein         YP_185224.1         2           665         H11         286         SACOL0446         conserved hypothetical protein         YP_185336.1         2							
665 H11 286 SACOL0446 conserved hypothetical protein YP_185336.1 2							
I DOZ I TITZ I ZOD I SMOOLTUZA I GONSCIVEU NVDUUHEUGAI DIDUEHI I TE 103030.1 I /	667	H12	286	SACOL1024	conserved hypothetical protein	YP_185890.1	2

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