

Supplementary Table S1. Genomic characteristics of *Lactobacillus acidophilus* strains

| Strain                 | Other designation       | Source                        | Accession no.   | Genome size (bp) | G+C content (%) | No. of contigs | N50 length (bp) | No. of CDS | rRNAs | tRNAs |
|------------------------|-------------------------|-------------------------------|-----------------|------------------|-----------------|----------------|-----------------|------------|-------|-------|
| <b>BCRC 12255</b>      | NCIMB 701243            | Cheese starter                | JAAONQ000000000 | 1,969,483        | 34.6            | 26             | 167,756         | 1,850      | 7     | 60    |
| <b>BCRC 14065</b>      | CSCC 2401               | Commercial probiotics         | JAAONR000000000 | 1,967,267        | 34.6            | 17             | 231,484         | 1,853      | 3     | 56    |
| <b>BCRC 14079</b>      |                         | Yogurt                        | JAAONS000000000 | 1,987,806        | 34.5            | 21             | 167,722         | 1,881      | 6     | 58    |
| <b>BCRC 16092</b>      | CCUG 12853              | Acidophilus milk              | JAAONT000000000 | 1,950,144        | 34.5            | 20             | 167,711         | 1,870      | 4     | 60    |
| <b>BCRC 16099</b>      | CIP 103600              | Acidophilus milk              | JAAOXPO00000000 | 1,966,633        | 34.6            | 3              | 231,484         | 1,851      | 3     | 56    |
| <b>BCRC 17008</b>      | ATCC 4357               | Human                         | JAAOXQ000000000 | 1,977,848        | 34.6            | 17             | 222,101         | 1,867      | 4     | 56    |
| <b>BCRC 17481</b>      | JCM 1028                | Human                         | JAAOXR000000000 | 1,993,969        | 34.6            | 18             | 167,771         | 1,873      | 7     | 61    |
| <b>BCRC 17486</b>      | JCM 1229                | Human                         | JAAPAR000000000 | 2,003,593        | 34.5            | 24             | 166,801         | 1,949      | 6     | 58    |
| <b>BCRC 80064</b>      |                         | Human                         | JAAPAS000000000 | 1,961,821        | 34.5            | 22             | 167,795         | 1,849      | 4     | 60    |
| ATCC 4796              |                         |                               | GCA_000159715   | 2,020,500        | 34.2            | 38             | 1,227,701       | 1,957      | 4     | 58    |
| ATCC 53544             | BCRC 17009              | Feed supplement               | GCA_002224305   | 1,991,906        | 34.7            | 1              | 1,991,906       | 1,867      | 12    | 61    |
| DSM 9126               | ATCC 13651              |                               | GCA_000469745   | 1,991,758        | 34.5            | 27             | 242,633         | 1,893      | 4     | 44    |
| DSM 20242              |                         |                               | GCA_000442825   | 2,047,860        | 34.7            | 21             | 169,267         | 1,921      | 13    | 57    |
| DSM 20079 <sup>T</sup> | BCRC 10695 <sup>T</sup> | Human                         | GCA_003047065   | 2,009,973        | 34.7            | 1              | 2,009,973       | 1,919      | 12    | 60    |
| <b>LA1063</b>          |                         | Dietary supplement            | JAAUOF000000000 | 1,995,761        | 34.6            | 14             | 242,274         | 1,874      | 4     | 56    |
| CIRM-BIA 442           |                         | Dairy product                 | GCA_000442865   | 1,986,992        | 34.7            | 19             | 169,301         | 1,867      | 10    | 58    |
| CIRM-BIA 445           |                         | Dairy product                 | GCA_000469765   | 2,002,008        | 34.5            | 22             | 242,633         | 1,893      | 4     | 14    |
| DS1_1A                 |                         | Commercial dietary supplement | GCA_003062045   | 1,970,142        | 34.6            | 36             | 168,008         | 1,851      | 5     | 61    |
| DS10_1A                |                         | Commercial dietary supplement | GCA_003053245   | 1,970,718        | 34.6            | 34             | 167,634         | 1,825      | 5     | 61    |
| DS11_1A                |                         | Commercial dietary supplement | GCA_003062025   | 1,968,514        | 34.6            | 34             | 168,008         | 1,851      | 5     | 61    |
| DS13_1A                |                         | Commercial dietary supplement | GCA_003061965   | 1,964,272        | 34.6            | 41             | 168,388         | 1,853      | 3     | 61    |
| DS13_1B                |                         | Commercial dietary supplement | GCA_003061905   | 1,963,932        | 34.6            | 37             | 167,831         | 1,851      | 3     | 61    |
| DS2_1A                 |                         | Commercial dietary supplement | GCA_003062005   | 1,982,025        | 34.6            | 110            | 86,217          | 1,855      | 16    | 61    |
| DS20_1                 |                         | Commercial dietary supplement | GCA_003061885   | 1,969,467        | 34.6            | 36             | 167,716         | 1,850      | 5     | 61    |
| DS24_1                 |                         | Commercial dietary supplement | GCA_003053135   | 1,968,373        | 34.6            | 32             | 168,151         | 1,851      | 5     | 61    |
| DS5_1A                 |                         | Commercial dietary supplement | GCA_003061985   | 1,968,830        | 34.6            | 28             | 167,756         | 1,851      | 5     | 61    |
| DS8_1A                 |                         | Commercial dietary supplement | GCA_003061945   | 1,967,572        | 34.6            | 32             | 167,594         | 1,851      | 5     | 61    |
| DS9_1A                 |                         | Commercial dietary supplement | GCA_003061925   | 1,969,008        | 34.6            | 28             | 167,756         | 1,852      | 5     | 61    |
| FSI4                   |                         | Yogurt                        | GCA_000934625   | 1,991,969        | 34.7            | 1              | 1,991,969       | 1,863      | 12    | 61    |
| L-55                   |                         | Commercial dairy product      | GCA_001950045   | 2,009,507        | 34.6            | 25             | 242,365         | 1,902      | 4     | 54    |
| LA1                    |                         | Dairy product                 | GCA_002286215   | 1,991,195        | 34.7            | 1              | 1,991,195       | 1,864      | 12    | 61    |
| La-14                  |                         | Dietary supplement            | GCA_000389675   | 1,991,579        | 34.7            | 1              | 1,991,579       | 1,869      | 12    | 61    |
| LA-5                   |                         | Dietary supplement            | JAAQQS000000000 | 1,965,390        | 34.6            | 19             | 231,909         | 1,856      | 3     | 57    |
| LMG P-21904            |                         | Commercial dietary supplement | GCA_002914945   | 1,965,665        | 34.6            | 16             | 320,101         | 1,853      | 3     | 58    |
| MGYG-HGUT-02379        |                         | Human                         | GCA_902386525   | 2,009,507        | 34.6            | 25             | 242,365         | 1,902      | 4     | 54    |
| NCFM                   |                         | Dietary supplement            | GCA_000011985   | 1,993,560        | 34.7            | 1              | 1,993,560       | 1,877      | 12    | 61    |
| P2                     |                         | Commercial probiotic          | GCA_002406675   | 2,046,837        | 35.7            | 70             | 167,927         | 1,923      | 12    | 61    |
| PNW3                   |                         | Pig                           | GCA_004348805   | 1,857,655        | 34.6            | 25             | 230,557         | 1,757      | 0     | 55    |
| UBLA-34                |                         | Commercial dietary supplement | GCA_003641085   | 1,951,037        | 34.6            | 34             | 167,656         | 1,845      | 3     | 60    |
| WG-LB-IV               |                         | Yogurt                        | GCA_001639165   | 1,951,689        | 34.6            | 74             | 89,054          | 1,819      | 4     | 60    |
| YT1                    |                         | Intestinal tract              | GCA_003952845   | 2,092,540        | 34.7            | 1              | 2,092,540       | 1,985      | 15    | 65    |

The bold letters indicate the strains which were sequenced in this study.

Supplementary Table S2. Genes and primers used for validation of reference strains.

| Gene          | Enzyme function                                        | Primer       | Sequence (5'–3')       | Amplicon size (bp) |
|---------------|--------------------------------------------------------|--------------|------------------------|--------------------|
| <i>oppA</i>   | Oligopeptide ABC transporter substrate-binding protein | SAL0000007-F | AACCTGGTATGAATACTAG    | 1167               |
|               |                                                        | SAL0000007-R | TAGCGTAAGCAACATTGTAC   |                    |
| <i>tr</i>     | Transcriptional regulator                              | SAL0000541-F | TAAGATGGCAATTAAGGAC    | 397                |
|               |                                                        | SAL0000541-R | ACTAATGCAATACCAG       |                    |
| <i>ybhL</i>   | Inner membrane protein YbhL                            | SAL0000678-R | TCCTGAGCGTCGTCAAGTA    | 663                |
|               |                                                        | SAL0000678-R | ACGATCATTACCCATACCA    |                    |
| <i>frdA</i>   | Fumarate reductase flavoprotein subunit                | SAL0001061-F | CGTCAAGACGGTAGCAAGAT   | 115                |
|               |                                                        | SAL0001061-R | TCCAGGCTTGAGCCTGACCA   |                    |
| <i>hp</i>     | hypothetical protein                                   | SAL0001150-F | TACAATGTGGACATGAGYGG   | 675                |
|               |                                                        | SAL0001150-R | AAGTTAAGACCAGATAAGTT   |                    |
| <i>rr</i>     | Response regulator                                     | SAL0001160-F | TGAAGATGACAACTCCGTTG   | 273                |
|               |                                                        | SAL0001160-R | GCTCCAATACCAAGACCTAC   |                    |
| <i>uvrA_2</i> | UvrABC system protein A                                | SAL0001385-F | ACCATATCTTGATGGTAGTG   | 358                |
|               |                                                        | SAL0001385-R | ACGCCGCAAGTTATTCATAA   |                    |
| <i>phoU</i>   | Phosphate-specific transport system accessory protein  | SAL0001390-F | CATGATTATGTTCGTGCTAGA  | 165                |
|               |                                                        | SAL0001390-R | GCTAAGTTAACAATGTGATCGC |                    |



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|------------|------------|----------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAL0000825 | bgIF_2     | PTS system beta-glucoside-specific EIIBCA component                        | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 3 |
| SAL0000826 | pyk        | Pyruvate kinase                                                            | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 4 |   |
| SAL0000827 | simA       | 6-phospho-alpha-glucosidase 1                                              | 1 | 1 | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0000828 | mutX       | 8-oxo-dGTP diphosphatase                                                   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0000829 | hp         | hypothetical protein                                                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0000830 | mmuM       | Homocysteine S-methyltransferase                                           | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0000831 | murAB      | UDP-N-acetylglucosamine 1-carboxyvinyltransferase 2                        | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000832 | hp         | hypothetical protein                                                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0000833 | ydjZ       | TVP38/TMEM64 family inner membrane protein YdjZ                            | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| SAL0000834 | hp         | hypothetical protein                                                       | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| SAL0000835 | kmtR       | HTH-type transcriptional regulator KmtR                                    | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| SAL0000836 | yecS       | Inner membrane amino-acid ABC transporter permease protein YecS            | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000837 | yicL_1     | putative inner membrane transporter YicL                                   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0000838 | group_2356 | cytoplasmic glycerophosphodiester phosphodiesterase                        | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000839 | hp         | hypothetical protein                                                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0000840 | pheT_1     | Phenylalanine--tRNA ligase beta subunit                                    | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0000841 | group_2359 | Fibronectin type III domain protein                                        | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 4 | 1 | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| SAL0000842 | yidA_2     | Sugar phosphatase YidA                                                     | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000843 | rlmCD_2    | 23S rRNA (uracil-C(5))-methyltransferase RlmCD                             | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 4 |
| SAL0000844 | rplP       | 50S ribosomal protein L16                                                  | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| SAL0000845 | hisS       | Histidine--tRNA ligase                                                     | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000846 | carB_1     | Carbamoyl-phosphate synthase large chain                                   | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000847 | pyrP       | Uracil permease                                                            | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000848 | ileS       | Isoleucine--tRNA ligase                                                    | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 5 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 6 |
| SAL0000849 | trxB_2     | Thioredoxin reductase                                                      | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 |
| SAL0000850 | rbgA       | Ribosome biogenesis GTPase A                                               | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000851 | group_2368 | CAAX amino terminal protease self- immunity                                | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| SAL0000852 | yveA       | Aspartate-proton symporter                                                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000853 | hp         | hypothetical protein                                                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0000854 | xlyA       | N-acetylmuramoyl-L-alanine amidase XlyA precursor                          | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000855 | lepA       | Elongation factor 4                                                        | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| SAL0000856 | prfB       | Peptide chain release factor 2                                             | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000857 | bgIH_1     | Aryl-phospho-beta-D-glucosidase BgIH                                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| SAL0000858 | group_2374 | mevalonate kinase                                                          | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000859 | ybbH_2     | putative HTH-type transcriptional regulator YbbH                           | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000860 | prs_2      | Ribose-phosphate pyrophosphokinase                                         | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000861 | spxA_1     | Regulatory protein Spx                                                     | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| SAL0000862 | adk        | Adenylate kinase                                                           | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| SAL0000863 | folT       | Folate transporter FolT                                                    | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 |
| SAL0000864 | yycF_2     | Transcriptional regulatory protein YycF                                    | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| SAL0000865 | rplR       | 50S ribosomal protein L18                                                  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0000866 | mtnN       | 5'-methylthioadenosine/S-adenosylhomocysteine nucleosidase                 | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| SAL0000867 | ppnK       | putative inorganic polyphosphate/ATP-NAD kinase                            | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| SAL0000868 | yheI_1     | putative multidrug resistance ABC transporter ATP-binding/permease protein | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| SAL0000869 | maeA       | putative NAD-dependent malic enzyme 2                                      | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000870 | murC       | UDP-N-acetylmuramate--L-alanine ligase                                     | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000871 | thiD       | Hydroxymethylpyrimidine/phosphomethylpyrimidine kinase                     | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0000872 | group_2388 | tetratricopeptide repeat protein                                           | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| SAL0000873 | hp         | hypothetical protein                                                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |

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 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   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| SAL0000889 | group_2404 | putative transporter YfdV | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 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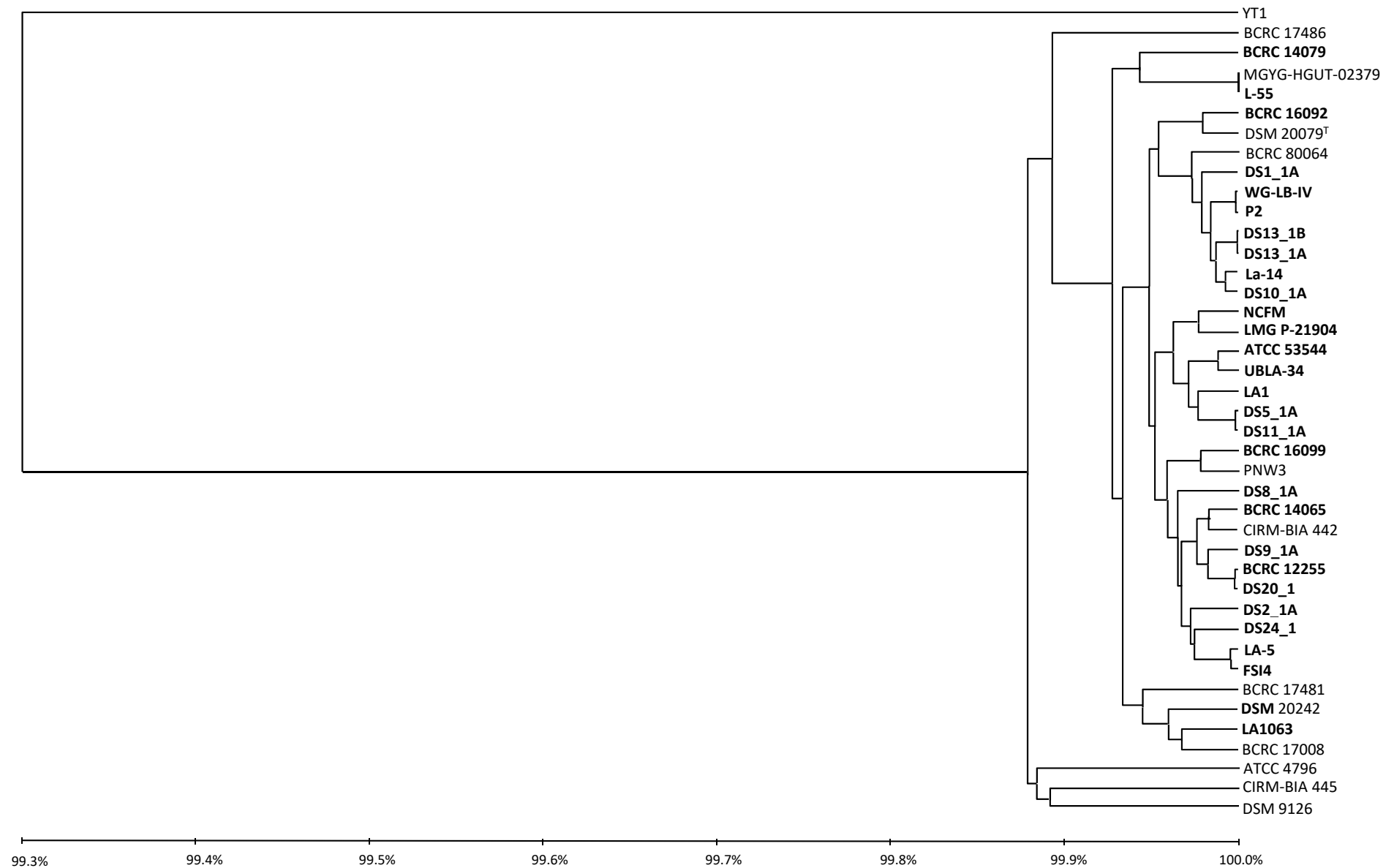
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|------------|-----------|---------------------------------------------------------------------------|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAL0001273 | hp        | hypothetical protein                                                      | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0001274 | rpoE      | putative DNA-directed RNA polymerase subunit delta                        | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0001275 | group_689 | deoxyguanosinetriphosphate triphosphohydrolase-like protein               | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0001276 | licC_1    | Lichenan permease IIC component                                           | 1 | 1 | 1 | 1 | 1 | 4 | 1   | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| SAL0001277 | rnmV      | Ribonuclease M5                                                           | 1 | 1 | 2 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0001278 | guaB      | Inosine-5'-monophosphate dehydrogenase                                    | 1 | 1 | 1 | 1 | 1 | 1 | 2   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| SAL0001279 | group_693 | Sulfatase                                                                 | 1 | 1 | 4 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 5 | 1 | 1 | 1 | 6 | 1 | 1 | 2 | 1 | 1 | 1 |   |
| SAL0001280 | lytR_2    | Transcriptional regulator LytR                                            | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0001281 | hp        | hypothetical protein                                                      | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0001282 | dhaK      | PTS-dependent dihydroxyacetone kinase, dihydroxyacetone-binding subunit C | 1 | 1 | 1 | 1 | 1 | 5 | 1   | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 3 |   |
| SAL0001283 | hp        | hypothetical protein                                                      | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0001284 | hp        | hypothetical protein                                                      | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| SAL0001285 | group_699 | phage resistance protein                                                  | 1 | 1 | 1 | 1 | 1 | 1 | 2   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| SAL0001286 | metQ_2    | putative D-methionine-binding lipoprotein MetQ precursor                  | 1 | 1 | 3 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0001287 | group_701 | Matrixin                                                                  | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0001288 | msrB      | Peptide methionine sulfoxide reductase MsrB                               | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0001289 | hp        | hypothetical protein                                                      | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0001290 | hp        | hypothetical protein                                                      | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |   |
| SAL0001291 | licC_2    | Lichenan permease IIC component                                           | 1 | 1 | 1 | 2 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| SAL0001292 | hp        | hypothetical protein                                                      | 1 | 1 | 2 | 1 | 1 | 1 | 3</ |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

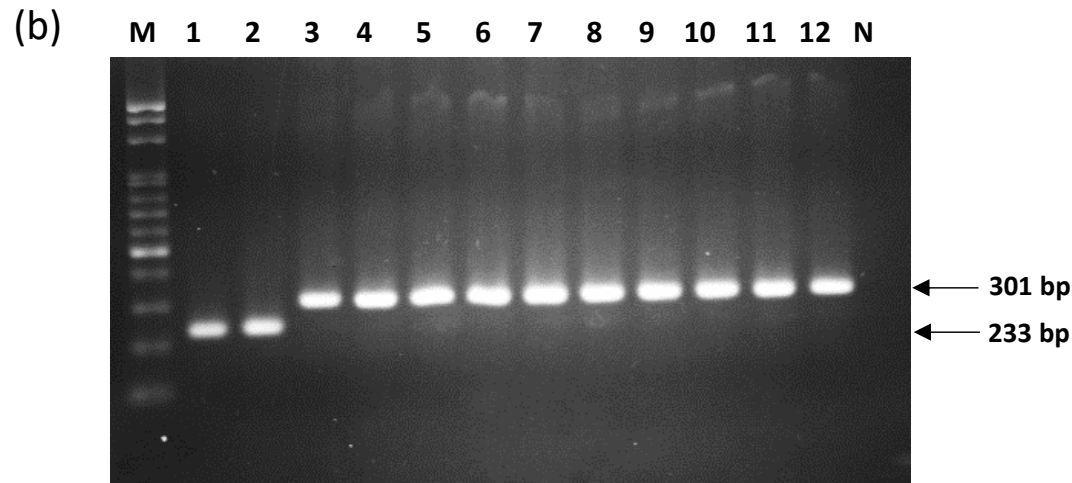




**Supplementary Fig. S1.** Unweighted pair group method with arithmetic mean (UPGMA) dendrogram based on OrthoANI values among the 41 *Lactobacillus acidophilus* strains.

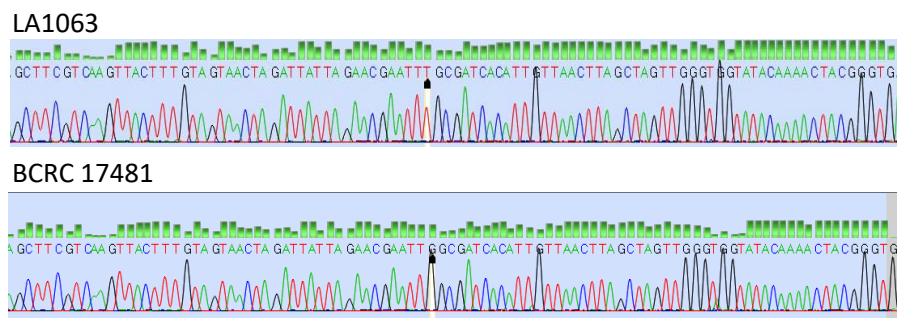
(a)

|                   |                                                                      |
|-------------------|----------------------------------------------------------------------|
|                   | <b>Rex2-F</b> →                                                      |
| Reference strains | <u>AGGTAAACGCGGATATGGAT</u> ATGATGTTAAAAATTGCTGAGTTTCTTTAAGAAAATTTT  |
| LA1063/BCRC 17481 | <u>AGGTAAACGCGGATATGGAT</u> ATGATGTTAAAAATTGCTGAGTTTCTTTAAGAAAATTTT  |
|                   | *****                                                                |
| Reference strains | GAATCAAGATACACTAACTAATGTTGCGTTAATTGGTGTGGTAACTTAGGACGAGCACT          |
| LA1063/BCRC 17481 | GAATCAAGATACACTAACTAATGTTGCGTTAATTGGTGTGGTAACTTAGGACGAGCACT          |
|                   | *****                                                                |
| Reference strains | TTTAAATTATAATTTTAAGCGTAGCAACAATATCCGTATTTCTTGTGCATTTGATATTAA         |
| LA1063/BCRC 17481 | TTTAAATTATAATTTTAAGCG-----                                           |
|                   | *****                                                                |
| Reference strains | CAAAGAAATTACTGGTCGAATTTTAAGCGGTGTTCCCGTTTATGATATGGAAGATTTAAA         |
| LA1063/BCRC 17481 | -----GTGTTCCCGTTTATGATATGGAAGATTTAAA                                 |
|                   | *****                                                                |
|                   | ← <b>Rex2-R</b>                                                      |
| Reference strains | ACAACAATTAAGTGATCAACAAATTTTCGATTGCTATTTT <u>ACAGTTCCTTCGACTGCGGC</u> |
| LA1063/BCRC 17481 | ACAACAATTAAGTGATCAACAAATTTTCGATTGCTATTTT <u>ACAGTTCCTTCGACTGCGGC</u> |
|                   | *****                                                                |
| Reference strains | <u>I</u>                                                             |
| LA1063/BCRC 17481 | <u>T</u>                                                             |
|                   | *                                                                    |

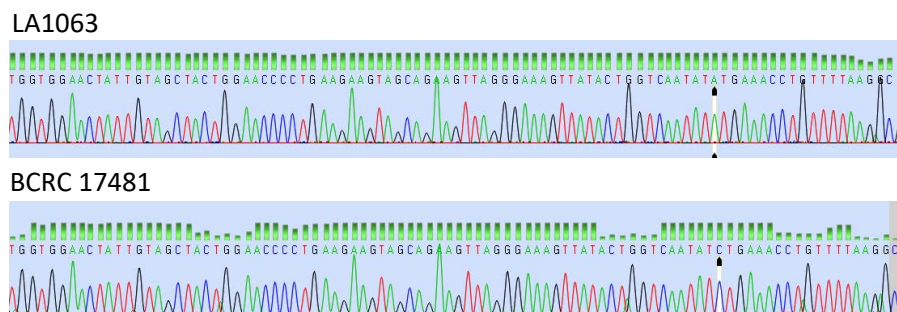


**Supplementary Fig. S2.** Alignment of *Rex2* gene sequences among the 11 *Lactobacillus acidophilus* strains reference strains and LA1063, differs in a 68-bp insertion/deletion. (a) The specific primer regions are indicated in bold letters with underlines. (b) PCR products amplified from genomic DNA of *L. acidophilus* strains. Template DNA was amplified with the strain-specific primers Rex2-F/R. Lanes M, 100-bp DNA size marker; 1, LA1063; 2, BCRC 17481; 3, BCRC 10695<sup>T</sup>; 4, BCRC 12255; 5, BCRC 14065; 6, BCRC 14079; 7, BCRC 16092; 8, BCRC 16099; 9, BCRC 17008; 10, BCRC 17009; 11, BCRC 17488; 12, BCRC 80064; N, negative.

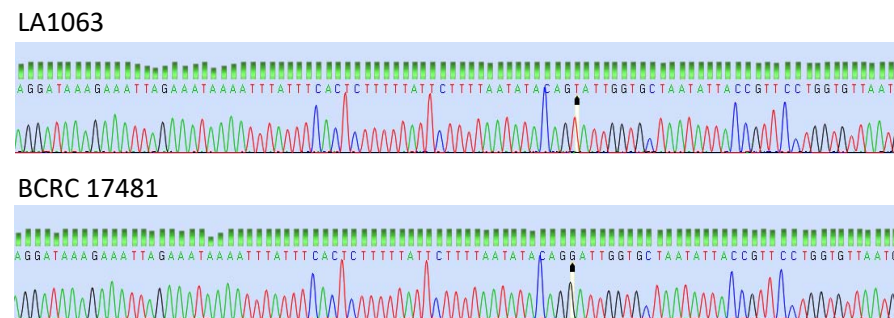
**(A) *phoU* (Phosphate-specific transport system accessory protein)**



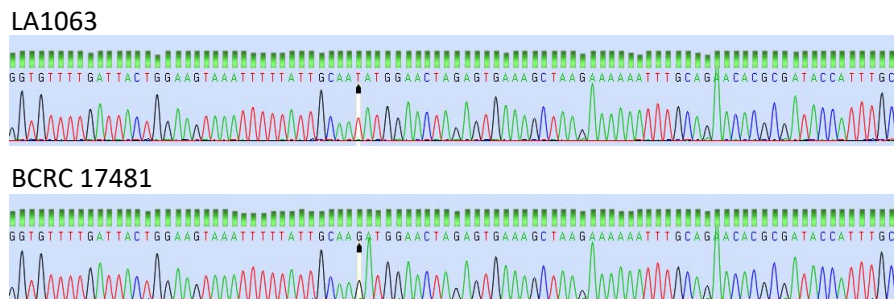
**(B) *uvrA\_1* (uvrABC system protein A)**



**(C) *secY* (protein translocase)**



**(D) *tilS* (tRNA(Ile)-lysidine synthetase)**



**Supplementary Fig. S3.** Discriminated loci between *Lactobacillus acidophilus* LA1063 and BCRC 17481. (A) *phoU*: T/G; (B) *uvrA\_1*: A/C; (C) *secY*: T/G; (D) *tilS*: T/G. The single nucleotide polymorphism site is marked with an arrow.