

Table S1. Results of cell and colony morphology, physiological and biochemical tests performed on LAB isolates. Isolates identified from multiple sources such as kefir (K), CWK and/or CWK-fermented sourdough (CWKS) have been labelled accordingly.

Test	Isolate 1 (Source-K, CWK, CWKS)	Isolate 2 (Source-K, CWK, CWKS)	Isolate 3 (Source-K, CWK, CWKS)	Isolate 4 (Source-K, CWK, CWKS)	Isolate 5 (Source-K, CWK, CWKS)	Isolate 6 (Source-K, CWK, CWKS)	Isolate 7 (Source-K, CWK, CWKS)	Isolate 8 (Source-K, CWK, CWKS)	Isolate 9 (Source-K, CWK, CWKS)	Isolate 10 (Source-K, CWK, CWKS)
Colony colour	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent
Surface appearance	Smooth/moist	Smooth/moist	Smooth/moist	Smooth/moist	Smooth/moist	Smooth/moist	Smooth/moist	Smooth/moist	Smooth/moist	Smooth/moist
Cell morphology	Bacilli	Bacilli	Bacilli	Bacilli	Bacilli	Bacilli	Bacilli	Bacilli	Bacilli	Bacilli
Gram reaction	+	+	+	+	+	+	+	+	+	+
Catalase test	–	–	–	–	–	–	–	–	–	–
Spore formation	–	–	–	–	–	–	–	–	–	–
Nitrate reduction test	–	–	–	–	–	–	–	–	–	–
Indole test	–	–	–	–	–	–	–	–	–	–
6.5% NaCl growth test	–	–	–	+	+	+	+	+	+	+
10% NaCl growth test	–	–	–	–	–	–	–	–	–	–
4 °C growth test	–	–	–	–	–	–	–	–	–	–
15 °C growth test	+	+	+	+	+	+	+	+	+	+
45 °C growth test	–	–	–	–	–	–	–	–	–	–
Growth at pH 3	–	–	–	–	–	–	–	–	–	–
Growth at pH 4	–	–	–	–	–	–	–	–	–	–
Growth at pH 5	–	–	–	–	–	–	–	–	–	–
0.1% Bile salt	+	+	+	+	+	+	+	+	+	+
0.9% Bile salts	+	+	+	+	+	+	+	+	+	+
1.5% bile salts	+	+	+	+	+	+	+	+	+	+
2% bile salts	+	+	+	+	+	+	+	+	+	+
Gas production during glucose fermentation in a Durham tube	+	+	+	+	+	+	+	+	+	+
Glycerol	–	–	–	+	+	+	–	–	–	–
D-Ribose	–	–	–	+	+	+	+	+	+	–
D-xylose	+	+	+	–	–	–	–	–	–	–

D-Galactose	+	+	+	+	+	+	+	+	+	+
D-Glucose	+	+	+	+	+	+	+	+	+	+
D-Fructose	+	+	+	+	+	+	+	–	–	+
D-Mannose	+	+	+	+	+	+	+	–	–	–
Mannitol	–	–	–	+	+	+	+	+	+	+
Sorbitol	–	–	–	+	+	+	–	–	–	–
N-acetyl-glucosamine	–	–	–	+	+	+	+	–	–	–
Amygdalin	–	–	–	–	–	–	–	+	+	–
Arbutin	–	–	–	+	+	+	–	+	+	–
Esculin	–	–	–	+	+	+	–	+	+	–
Salicin	–	–	–	+	+	+	+	–	–	–
Cellobiose	–	–	–	+	+	+	–	–	–	–
Maltose	+	+	+	+	+	+	+	+	+	–
Lactose	+	+	+	+	+	+	–	+	+	–
Melibiose	+	+	+	+	+	+	–	+	+	+
Sucrose	+	+	+	+	+	+	+	+	+	+
Trehalose	–	–	–	+	+	+	+	–	–	+
Melezitose	–	–	–	–	–	–	–	–	–	–
D-Raffinose	–	–	–	+	+	+	–	+	+	–
Starch	+	+	+	–	–	–	–	–	–	–
Glycogen	+	+	+	–	–	–	–	–	–	–
D-Gentiobiose	–	–	–	+	+	+	–	–	–	–
D-Turanose	–	–	–	+	+	+	–	–	–	–
D-Lyxose	–	–	–	–	–	–	–	–	–	–
D-Tagatose	–	–	–	+	+	+	–	–	–	–
D-Arabitol	–	–	–	+	+	+	–	–	–	–
Gluconate	+	+	+	+	+	+	–	–	–	+
Fermentation	Obligately Heterofermen tative	Obligately Heterofermen tative	Obligately Heterofermen tative	Facultatively Heterofermen tative	Facultatively Heterofermen tative	Facultatively Heterofermen tative	Obligately Heterofermen tative	Obligately Heterofermen tative	Obligately Heterofermen tative	Obligately Heterofermen tative
Isolate identified	<i>Limosilactoba cillus fermentum</i>	<i>Limosilactoba cillus fermentum</i>	<i>Limosilactoba cillus fermentum</i>	<i>Lactobacillus plantarum</i>	<i>Lactobacillus plantarum</i>	<i>Lactobacillus plantarum</i>	<i>Lactobacillus fusant</i>	<i>Lactobacillus reuteri</i>	<i>Lactobacillus reuteri</i>	<i>Lactobacillus kunkeei</i>

Table S2. Results of cell and colony morphological, physiological and biochemical tests performed on AAB isolates. Isolates identified from multiple sources such as kefir (K), CWK and/or CWK-fermented sourdough (CWKS) have been labelled accordingly.

Tests	<i>Isolate 1 (Source—K, CWK, CWKS)</i>	<i>Isolate 2 (Source- K, CWK, CWKS)</i>	<i>Isolate 3 (Source -K, CWK, CWKS)</i>	<i>Isolate 4 (Source- K, CWK, CWKS)</i>	<i>Isolate 5 (Source-K, CWK, CWKS)</i>
Colony colour	White and opaque	White and opaque	White and opaque	White and opaque	Cream colour and opaque
Surface appearance	Smooth	Smooth	Smooth	Smooth	Smooth
Cell morphology	Bacilli or oblong	Bacilli or oblong	Bacilli or oblong	Bacilli or oblong	Oblong
Gram reaction test	–	–	–	–	–
Catalase test	+	+	+	+	+
Oxidation of ethanol	+	+	–	–	–
Oxidation of acetic acid	–	–	–	–	–
Methyl red test	–	–	–	–	–
Voges–Proskauer test	–	–	–	–	–
30% glucose growth test	–	–	–	–	–
arginine dihydrolase	–	–	–	–	+
Lysine	–	–	–	–	–
Ornithine decarboxylase	–	–	–	–	–
Citrate Utilisation	–	–	–	–	–
Dihydrogen sulphide	–	–	–	–	–
Carr’s medium	+	+	+	+	+
Urease test	–	–	–	–	+
tryptophane deaminase	–	–	–	–	–
Indole test	–	–	–	–	–
Acetoin	–	–	–	–	+
Fructose	+	+	+	+	+
Ribose	+	+	+	+	+
Xylose	+	+	+	+	+
Galactose	+	+	+	+	+
Mannitol	–	–	–	–	–
Raffinose	–	–	–	–	–
Inositol	–	–	–	–	–
Sorbitol	–	–	–	–	–

Rhamnose	+	+	–	–	–
Sucrose	–	–	–	–	–
Melibiose	+	+	+	+	–
Amygdalin	+	+	+	+	–
Arabinose	+	+	+	+	–
Nitrogen dioxide	–	–	+	+	–
Nitrite	–	–	+	+	–
Isolate identified	<i>Acetobacter aceti</i>	<i>Acetobacter aceti</i>	<i>Acetobacter lovaniensis</i>	<i>Acetobacter lovaniensis</i>	<i>Acetobacter pasteurianus</i>

Table S3. Results of cell and colony morphology, physiological and biochemical tests performed on yeast isolates. Isolates identified from multiple sources such as kefir (K), CWK and/or CWK-fermented sourdough (CWKS), have been labelled accordingly.

Test	Isolate 1 (Source- K, CWK, CWKS)	Isolate 2 (Source- K, CWK, CWKS)	Isolate 3 (Source- K, CWK, CWKS)	Isolate 4 (Source- K, CWK, CWKS)	Isolate 5 (Source- K, CWK, CWKS)	Isolate 6 (Source- K, CWK, CWKS)	Isolate 7 (Source- K, CWK, CWKS)
Colony colour	Cream	Pink–red	Milky white	Milky white	Milky white	White	White
Surface appearance	Glossy and smooth	Smooth and glossy	Smooth	Smooth	Smooth	Smooth	Smooth
Cell morphology	Oval	Oval	Oval	Oval	Oval	Oval	Oval
Vegetative propagation	Budding	Budding	Budding	Budding	Budding	Budding	Budding
Mycelium growth test	Pseudohypha	Pseudohypha	Pseudohypha	Pseudohypha	Pseudohypha	Pseudohypha	Pseudohypha
Urease test	–	–	–	–	–	–	–
Nitrate reduction test	–	–	–	–	–	–	–
D-Glucose as a carbon source	+	+	+	+	+	+	+
Glycerol	+	–	–	–	–	+	+
Calcium 2-Keto-Gluconate	–	–	–	–	–	+	–
L-Arabinose	–	–	–	–	–	+	–
D-Xylose as a carbon source	+	–	–	–	–	+	–
Adonitol	–	+	–	–	–	+	–
Xylitol	+	+	–	–	–	+	–
D-Galactose as a carbon source	+	+	+	+	+	+	–
Inositol	–	–	–	–	–	–	–
D-Sorbitol as a carbon source	+	–	–	–	–	+	+
Methyl- α -D-Glucopyranoside	–	–	–	–	–	+	–

N-Acetyl-Glucosamine	–	–	–	–	–	+	–
D-Cellobiose as a carbon source	+	–	–	–	–	+	–
D-Lactose as a carbon source	+	–	–	–	–	–	–
D-Maltose as a carbon source	–	+	+	+	+	+	–
D-Saccharose as a carbon source	+	+	+	+	+	+	+
D-Trehalose as a carbon source	–	–	–	–	–	+	+
D-Melezitose as a carbon source	–	–	–	–	–	+	–
D-Raffinose as a carbon source	+	+	+	+	+	+	+
Isolate identified	<i>Candida kefyr</i>	<i>Rhodotorula mucilaginosa</i>	<i>Saccharomyces cerevisiae</i>	<i>Saccharomyces cerevisiae</i>	<i>Saccharomyces cerevisiae</i>	<i>Candida guilliermondii</i>	<i>Candida colliculosa</i>

Table S4. Sanger sequencing of each isolate of the LAB and AAB species.

Identified organisms (% identity match)	Accession number*	E-value*	Maximum score*
<i>Limosilactobacillus fermentum</i> strain CAU6479 16S ribosomal RNA gene, partial sequence (100)	MF582851.1	0.0	2619
<i>Lactobacillus plantarum</i> strain RS66X 16S ribosomal RNA gene, partial sequence (100)	MN450268.1	0.0	2536
<i>Lactobacillus Fasant</i> XU1 16S ribosomal RNA gene, partial sequence (99)	KT335719.1	0.0	2687
<i>Lactobacillus reuteri</i> DSM 20016, 16S ribosomal RNA gene, partial sequence (100)	NR_119069.1	0.0	2883
<i>Lactobacillus kunkeei</i> strain H14_2_1BCO2 16S ribosomal RNA gene, partial sequence (100)	KF599421.1	0.0	2582
<i>Acetobacter aceti</i> strain W1 16S ribosomal RNA gene, partial sequence (100)	KC662508.1	0.0	2676
<i>Acetobacter lovaniensis</i> strain NBRC 13753 16S ribosomal RNA, partial sequence (100)	NR_040832.1	0.0	2665
<i>Acetobacter pasteurianus</i> strain bh12 16S ribosomal RNA gene, partial sequence (100)	FJ227313.1	0.0	2326

The E-value* determines the number of hits one can “expect” to see by chance when searching a database of a particular size, which in this case is 0. Therefore, this implies that there were no random hits in the identification of LAB and AAB species on NCBI BLAST. The accession number* is the unique identification number on the NCBI BLAST database. The maximum score* is the total score that has been identified as that particular microorganism, which is the highest alignment score of a set of aligned segments from the same subject (database) sequence. The percentage of identity was determined by performing multiple sequence alignments in BLAST.

Supplementary File S1. Sanger sequencing output: 16s rDNA partial sequences for LAB and AAB.

LAB Isolate 1: *Limosilactobacillus fermentum* strain CAU6479 16S ribosomal RNA gene.

5'ACTGATTGATGGTGTCTGCACCTGATTGACGATGGATCAC
CAGTGAGTGGCGGACGGGTAGTAACACGTAGGTAACCTGCCCC
GGAGCGGGGATAACATTTGGAAACAGATGCTAATACCGCATA
ACAACAAAAGCCACATGGCTTTTGTGGAAAGATGGCTTTGGC
TATCACTCTGGGATGGACCTGCGGTGCATTAGCTAGTTGGTAAG
GTAACGGCTTACCAAGGCGATGATGCATAGCCGAGTTGAGAGA
CTGATCGGCCACAATGGAAGTGAACACGGTCCATACTCCTAC
GGGAGGCAGCAGTAGGGAATCTTCCACAATGGGCGCAAGCCT
GATGGAGCAACACCGCGTGAGTGAAGAAGGGTTTCGGCTCGT
AAAGCTCTGTTGTTGGAGAAGAACGTGCGTGAGAGTAAGTGT
CACGCAGTGACGGTATCCAACCAGAAAGTCACGGCTAACTACG
TGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTATCCGG
ATTTATTGGGCGTAAAGCGAGCGCAGGCGGTTGCTTAGGTCTG
ATGTGAAAGCCTTCGGCTTAACCGAAGAAGTGCATCGGAAACC
GGGCGACTTGAGTGCAGAAGAGGACAGTGGAAGTCCATGTGT
AGCGGTGGAATGCGTAGATATATGGAAGAACACAGTGGCGAA
GGCGGCTGTCTGGTCTGCAACTGACGCTGAGGCTCGAAAGCAT
GGGTAGCGAACAGGATTAGATACCCTGGTAGTCCATGCCGTAA
ACGATGAGTGCTAGGTGTTGGAGGGTTTCCGCCCTTCAGTGCC
GGAGCTAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCA

AGGTTGAAACTCAAAGGAATTGACGGGGGCCCCGCACAAGCGG
TGGAGCATGTGGTTTAATTCTGAAGCTACGCGAAGAACCTTACC
AGGTCCTTGACATCTTGCGCAACCTTAGAGATAAGGCGTTCCCTT
CGGGGACGCAATGACAGGTGGTGCATGGTCGTCAGCTCGT
GTCGTGAGATGTTGGGTAAAGTCCCGCAACGAGCGCAACCCTT
GTTACTAGTTGCCAGCATTAAAGTTGGGCACTCTAGTGAGACTGC
CGGTGACAAACCGGAGGAAGGTGGGGACGACGTCAGATCATC
ATGCCCCCTTATGACCTGGGCTACACACGTGCTACAATGGACGGT
ACAACGAGTCGCAAGCTCGCGAGAGTAAGCTAATCTCTTAAAG
CCGTTCTCAGTTCGGACTGTAGGCTGCAACTCGCCTACACGAA
GTCGGAATCGCTAGAATCGCGGATCAGCATGCCGCGGTGAATA
CGTTCCCGGGCCTTGTACACACCGCCCGTCACACCATGGGAGT
TTGTAACGCCCAAAGTCGGTGGCCTAACCATTAGGAGGGAGCC
3'

LAB Isolate 2: *Lactobacillus plantarum* strain RS66X 16S ribosomal RNA gene, partial sequence.

5'TTACCCACCGACTTTGGGTGTTACAACTCTCATGGTGT
GACGGGCGGTGTGTACAAGGCCCGGGAACGTATTCACGCGGC
ATGCTGATCCGCGATTACTAGCGATTCCGACTTCATGTAGGCGA
GTTGCAGCCTACAATCCGAAGTGAAGTGGCTTTAAGAGATTA
GCTTACTCTCGCGAGTTCGCAACTCGTTGTACCATCCATTGTAG
CACGTGTGTAGCCCAGGTCATAAGGGGCATGATGATTTGACGTC
ATCCCCACCTTCCTCCGTTTGTACCGGCAGTCTCACCAGAGT
GCCCAACTTAATGCTGGCAACTGATAATAAGGGTTGCGCTCGTT
GCGGGACTTAACCCAACATCTCACGACACGAGCTGACGACAA
CCATGCACCACCTGTATCCATGTCCCCGAAGGGAACGTCTAATC
TCTTAGATTTGCATAGTATGTCAAGACCTGGTAAGGTTCTTCGCG
TAGCTTCGAATTAAACCACATGCTCCACCGCTTGTGCGGGCCCC
CGTCAATTCCTTTGAGTTTCAGCCTTGCGGCCGTACTCCCCAGG
CGGAATGCTTAATGCGTTAGCTGCAGCACTGAAGGGCGGAAAC
CCTCCAACACTTAGCATTTCATCGTTTACGGTATGGACTACCAGG
GTATCTAATCCTGTTTGCTACCCATACTTTGAGCCTCAGCGTCA
GTTACAGACCAGACAGCCGCTTCGCCACTGGTGTCTCTCCATA
TATCTACGCATTTACCGCTACACATGGAGTTCCACTGTCTCTT
CTGCACTCAAGTTTCCCAGTTTCCGATGCATTCTTCGGTTGAG
CCGAAGGCTTTCACATCAGACTTAAAAAACCGCCTGCGCTCGC
TTTACGCCCAATAAATCCGGACAACGCTTGCCACCTACGTATTA
CCGCGGCTGCTGGCACGTAGTTAGCCGTGGCTTTCTGGTTAAAT
ACCGTCAATACCTGAACAGTTACTCTCAGATATGTTCTTCTTTAA
CAACAGAGTTTTACGAGCCGAAACCTTCTTCACTACGCGGC
GTTGCTCCATCAGACTTTCGTCCATTGTGGAAGATTCCCTACTG
CTGCCTCCCGTAGGAGTTTGGGCCGTGTCTCAGTCCCAATGTGG
CCGATTACCTCTCAGGTCGGCTACGTATCATTGCCATGGTGAG
CCGTTACCCCAACCATCTAGCTAATACGCCGCGGGACCATCCAA
AAGTGATAGCCGAAGCCATCTTCAAACCTCGGACCATGCGGTC
CAAGTTGTTATGCGGTATTAGCATCTGTTTCCAGGTGTTATCCCC
CGCTTCTGGGCAGGTTTCCCACGTGTTACTCACCAGTTCGCCAC
TCACTCAAATGTAAATCATGATGCAAGCACCAATCAATACCAG
A 3'

LAB Isolate 3: *Lactobacillus Fusant* XU1 16S ribosomal RNA gene, partial sequence.

5'ATGCAGTCGAACGAGTTCTCGTTGATTGCATCGGTGCTTG
CACCGAGATTCAACATGGAACGAGTGGCGGACGGGTGAGTAA
CACGTGGGTAACTGCCCTTAAGTGGGGGATAACATTTGGAAA

CAGATGCTAATACCGCATAGATCCAAGAACCGCATGGTTCTTGG
 CTGAAAGATGGCGTAAGCTATCGCTTTTGGATGGACCCGCGGC
 GTATTGCTAGTTGGTGAGGTAATGGCTACCAAGGCGATGATAC
 GTAGCCGAACCTGAGAGGTTGATCGGCCACATTGGGACTGAGAC
 ACGGCCCAAACCTCCTACGGGAGGCAGCAGTAGGGAATCTTCC
 ACAATGGACGCAAGTCTGATGGAGCAACGCCGCGTGAGTGAA
 GAAGGCTTTCGGGTCGTAAAACCTCTGTTGTTGGAGAAGAATGG
 TCGGCAGAGTAACTGTTGTCGGCGTGACGGTATCCAACCAGAA
 AGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAAACGTAGGT
 GGCAAGCGTTATCCGGATTTATTGGGCGTAAAGCGAGCGCAGG
 CGTTTTTTAAGTCTGATGTGAAAGCCCTCGGCTTAACCGAGGA
 AGCGCATCGGAAACTGGGAAACTTGAGTGCAGAAGAGGACAG
 TGGAATCCATGTGTAGCGGTGAAATGCGTAGATATATGGAAG
 AACACCAGTGGCGAAGGCGGCTGTCTGGTCTGTAACCTGACGCT
 GAGGCTCGAAAGCATGGGTAGCGAACAGGATTAGATACCCTGG
 TAGTCCATGCCGTAAACGATGAATGCTAGGTGTTGGAGGGTTTC
 CGCCCTTCAGTGCCGCAGCTAACGCATTAAGCATTCCGCCTGG
 GGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGG
 GCCCGCACAAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACG
 CGAAGAACCTTACCAGGTCTTGACATCTTTTGATCACCTGAGAG
 ATCAGGTTTCCCCTTCGGGGGCAAAATGACAGGTGGTGCATGG
 TTGTCGTCAGCTCGTGTCTGAGATGTTGGGTAAAGTCCCGCAA
 CGAGCGCAACCCTTATGACTAGTTGCCAGCATTTAGTTGGGCAC
 TCTAGTAAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGAT
 GACGTCAAATCATCATGCCCCCTTATGACCTGGGCTACACACGTG
 CTACAATGGATGGTACAACGAGTTGCGAGACCGCGAGGTCAA
 GCTAATCTCTTAAAGCCATTCTCAGTTCGGACTGTAGGCTGCAA
 CTCGCCTACACGAAGTCGGAATCGCTAGTAATCGCGGATCAGC
 ACGCCGCGGTGAATACGTTCCCGGGCCTTGTACACACCGCCCG
 TCACACCATGAGAGTTTGTAACACCCGAAGCCGGTGGCGTAAC
 TCCTTTAGGGAGCGAGCCGTCTAAGGTGACAAATT3'

LAB Isolate 4: *Lactobacillus reuteri* DSM 20016, 16S ribosomal RNA gene, partial sequence.

5'AGAGTTTGATNNTGGCTCAGGATGAACGCCGCGGTGTG
 CCTAATACATGCAAGTCGTACGCACTGGCCCAACTGATTGATGG
 TGCTTGACCTGATTGACGATGGATCACCAGTGAGTGGCGGAC
 GGGTGAGTAACACGTAGGTAACCTGCCCCGAGCGGGGGATA
 ACATTTGGAAACAGATGCTAATACCGCATAACAACAAAAGCCG
 CATGGCTTTTGTGTTGAAAGATGGCTTTGGCTATCACTCTGGGATG
 GACCTGCGGTGCATTAGCTAGTTGGTAAGGTAACGGCTTACCA
 AGGCGATGATGCATAGCCGAGTTGAGAGACTGATCGGCCACAA
 TGGAATCTTCCACAATGGGCGCAAGCCTGATGGAGCAACGCC
 GCGTGAGTGAAGAAGGGTTTCGGCTCGTAAAGCTCTGTTGTTG
 GAGAAGAACGTGCGTGAGAGTAACTGTTNCNCGCAGTGACGGT
 ATCCAACCAGAAAGTCACGGCTAACTACGTGCCAGCAGCCGC
 GGTAATACGTAGGTGGCAAGCGTTATCCGGATTTATTGGGCGTA
 AAGCGAGCGCAGGCGGTTGCTTAGGTCTGATGTGAAAGCCTTC
 GGCTTAACCGAAGAAGTGCATCGGAAACCGGGCGACTTGAGT
 GCAGAAGAGGACAGTGGAATCCATGTGTAGCGGTGGAATGC
 GTAGATATATGGAAGAACACCAAGTGGCGAAGGCGGCTGTCTGG
 TCTGCAACTGACGCTGAGGCTCGAAAGCATGGGTAGCGAACA
 GGATTAGATACCCTGGTAGTCCATGCCGTAAACGATGAGTGCTA
 GGTGTTGGAGGGTTCCGCCCTTCAGTGCCGGAGCTAACGCATT
 AAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCA

AAGGAATTGACGGGGGCCCCGCACAAGCGGTGGAGCATGTGGT
 TTAATTCGAAGCTACGCGAAGAACCTTACCAGGTCTTG1ACATC
 TTGCGCTAACCTTAGAGATAAGGCGTTNCCTTCGGGGACGCAA
 TGACAGGTGGTG1CATGGTCGTCGTCAGCTCGTGTCTGTGAGATG
 TTGGGTAAAGTCCTGCAACGAGCGCAACCCTTGTTACTAGTTGC
 CAGCATTAAAGTTGGGCACTCTAGTGAGACTGCCGGTGACAAAC
 CGGAGGAAGGTGGGGACGACGTCAGATCATCATGCCCCCTTATG
 ACCTGGGCTACACACGTGCTACAATGGACGGTACAACGAGTCG
 CAAGCTCGCGAGATAAGCTAATCTCTTAAAGCCGTTCTCAGTTC
 GGACTGTAGGCTGCAACTCGCCTACACGAAGTCGGAATCGCTA
 GTAATCGCGGATCAGCATGCCGCGGTGAATACGTTCCCGGGCC
 TTGTACACACCGCCCCGTACACCATGGGAGTTTGTAACGCCCA
 AAGTCGGTGGCCTAACCTTTATGGAGGGAGCCGCCTAAGGCGG
 GACAGATGACTGGGGTGAAGTCGTAACAAGGTAGCCGTAGGA
 GAGCCTGCGGCTGGATCACCTCCTTTNT3'

LAB Isolate 5: *Lactobacillus kunkeei* strain H14_2_1 BCO2 16S ribosomal RNA gene, partial sequence.

5'GACGAGCTCTCCTGAATTGATTTTATGCTTGCATAAATGAT
 TTTTAGATTTCGGAGCGAGTGGCGAACTGGTGAGTAACACGTGG
 GTAACCTGCCCCGAAGCGGGGGATAACATTTGGAAACAAATGC
 TAATACCGCATAATTAGGTGGAACCGCATGGTTCCAACCTGAAA
 GATGGCTCTGCTATCACTTTGGGATGGACCCGCGCCGTATTAGT
 TAGTTGGTGAGATAAAAGCCACCAAGACCATGATACGTAGCC
 GACCTGAGAGGGTAATCGGCCACATTGGGACTGAGACACGGC
 CCAGACTCCTACGGGAGGCAGCAGTAGGGAATCTTCCACAATG
 GACGAAAGTCTGATGGAGCAACGCCGCGTGAGTGATGAAGGT
 TTTCGGATCGTAAAACTCTGTTGTAAAGAAGAACAAGTGTTAG
 AGTAACTGTAAACACTTTGACGGTATTTAACCAGAAAGCCACG
 GCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAG
 CGTTGTCCGATTTATTGGGCGTAAAGCGAGCGCAGGCGGATTT
 GTAAGTCTGCTGTGAAAGCCCTCAGCTCAACTGAGGAAGTGCA
 GTGGAACTACAAAACCTGAGTACAGAAGAGGAAAGTGGAAC
 TCCATGTGTAGCGGTGAAATGCGTAGATATATGGAAGAACACC
 AGTGCGGAAGGCGGCTTTCTGGTCTGTTACTGACGCTGAGGCT
 CGAAAGCATGGGTAGCGAACAGGATTAGATACCCTGGTAGTCC
 ATGCCGTAAACGATGAATACTAGGTGTTGGAGGGTTTCCGCCCT
 TCACTGCCGCAGCTAACGCATTAAGTATTCCGCCTGGGGAGTAC
 GACCGCAAGGTTGAAACTCAAAGGAATTGACGGGGGCCCGCA
 CAAGTGGTGGAGCATGTGGTTTAATTCGATGCTACGCGAAGAA
 CCTTACCAGCTCTTGACATCTTCTGCCAACCCAAGAGATTGGGC
 GTTCCCTTCGGGGACAGAATGACAGGTGGTGCATGGTTGTCGT
 CAGCTCGTGTCTGTGAGATGTTGGGTAAAGTCCCGCAACGAGCG
 CAACCCTTATTATTAGTTGCCAGCATTTAGTTGGGCACTCTAGTG
 AGACTGCCGGTGATAAACCGGAGGAAGGTGGGGACGACGTCA
 AATCATCATGCCCCTTATGAGCTGGGCTACACACGTGCTACAAT
 GGATGGTACAACGAGTCGCGAAACCGCGAGGTCAAGCTAATCT
 CTTAAAGCCATTCTCAGTTCGGATTGCAGGCTGCAACTCGCCTG
 CATGAAGTTGGAATCACTAGTAATCGTGGATCAGCATGCCACG
 GTGAATACGTTCCCGGGCCTTGTAACACACCGCCCGTCACACCAT
 GAGAGTTTGTAACACCCAAAGACGATGGGGTAA3'

AAB Isolate 1: *Acetobacter aceti* strain W1 16S ribosomal RNA gene, partial sequence.

5'AGAGTTTGATTCTGGCTCAGAGCGAACGCTGGCGGCATG
 CTTAACACATGCAAGTCGCACGAAGGCTTCGGCCTTAGTGGCG
 GACGGGTGAGTAACGCGTAGGAATCTATCCATGGGTGGGGGAT

AACTCCGGGAAGTGGAGCTAATACCGCATGATACCTGAGGGTC
AAAGGCGCAAGTCGCCTGTGGAGGAGTCTGCGTTTGATTAGCT
TGTTGGTGGGGTAAAGGCCTACCAAGGCGATGATCAATAGCTG
GTCTGAGAGGATGATCAGCCACACTGGGACTGAGACACGGCC
CAGACTCCTACGGGAGGCAGCAGTGGGGAATATTGGACAATGG
GGGCAACCCTGATCCAGCAATGCCGCGTGTGTGAAGAAGGTTT
TCGGATTGTAAAGCACTTTCGGCGGGGACGATGATGACGGTAC
CCGCAGAAGAAGCCCCGGCTAACTTCGTGCCAGCAGCCGCGG
TAATACGAAGGGGGCTAGCGTTGCTCGGAATGACTGGGCGTAA
AGGGCGTGTAGGCGGTTTGTACAGTCAGATGTGAAATCCCCGG
GCTTAACCTGGGAGCTGCATTTGATACGTGCAGACTAGAGTATG
AGAGAGGGTTGTGGAATTCTCAGTGTAGAGGTGAAATTCGTAG
ATATTGGGAAGAACACCGGTGGCGAAGGCGGCAACCTGGCTC
ATTACTGACGCTGAGGCGCGAAAGCGTGGGGAGCAAACAGGA
TTAGATACCCTGGTAGTCCACGCTGTAAACGATGTGTGCTGGAT
GTTGGGTAACTTAGTTACTCAGTGTCTAGCTAACGCGATAAGC
ACACCGCCTGGGGAGTACGGCCGCAAGGTTGAAACTCAAAGG
AATTGACGGGGGCCCCGCACAAGCGGTGGAGCATGTGGTTTAAT
TCGAAGCAACGCGCAGAACCTTACCAGGGCTTGTATGGAGAG
GCTGTATTCAGAGATGGATATTTCCCGCAAGGGACCTCTTGAC
AGGTGCTGCATGGCTGTCTCAGCTCGTGTCTGTGAGATGTTGG
TTAAGTCCCGCAACGAGCGCAACCCTTATCTTTAGTTGCCAGCA
TGTTTGGGTGGGCACTCTAAAGAGACTGCCGGTGACAAGCCGG
AGGAAGGTGGGGATGACGTCAAGTCCTCATGGCCCTTATGTCC
TGGGCTACACACGTGCTACAATGGCGGTGACAGTGGGAAGCTA
GATGGCGACATCGTGCCGATCTCTAAAAACCGTCTCAGTTCGG
ATTGCACTCTGCAACTCGAGTGCATGAAGGTGGAATCGCTAGT
AATCGCGGATCAGCATGCCGCGGTGAATACGTTCCCGGGCCTT
GTACACACCGCCCGTCACACCATGGGAGTTGGTTTGACCTTAA
GCCGGTGAGCGAACCGCAAGGACGCAGCCGACCACGGTCGGG
TCAGCGACTGGGGTGAAGTCGTAACAAGGTAGCC3'

AAB Isolate 2: *Acetobacter lovaniensis* strain NBRC 13753 16S ribosomal RNA, partial sequence.

5'TGAGTTTTGATCCTGGCTCAGAGCGAACGCTGGCGGCAT
GCTTAACACATGCAAGTCGCACGAACCTTTCGGGGTTAGTGGC
GGACGGGTGAGTAACGCGTAGGAATCTGTCCACGGGTGGGGG
ATAACTCTGGGAAACTGGAGCTAATACCGCATGATACCTGAGG
GTCAAAGGCGCAAGTCGCCTGTGGAGGAGCCTGCGTTCGATTA
GCTAGTTGGTGGGGTAAAGGCCTACCAAGGCGATGATCGATAG
CTGGTTTGAGAGGATGATCAGCCACACTGGGACTGAGACACGG
CCCAGACTCCTACGGGAGGCAGCAGTGGGGAATATTGGACAAT
GGGGGCAACCCTGATCCAGCAATGCCGCGTGTGTGAAGAAGG
TCTTCGGATTGTAAAGCACTTTCGACGGGGACGATGATGACGG
TACCCGTAGAAGAAGCCCCGGCTAACTTCGTGCCAGCAGCCGC
GGTAATACGAAGGGGGCTAGCGTTGCTCGGAATGACTGGGCGT
AAAGGGCGTGTAGGCGGTTTACACAGTCAGATGTGAAATCCCC
GGGCTTAACCTGGGAGCTGCATTTGATACGTGTAGACTAGAGTG
TGAGAGAGGGTTGTGGAATTCCCAGTGTAGAGGTGAAATTCGT
AGATATTGGGAAGAACACCGGTGGCGAAGGCGGCAACCTGGC
TCATGACTGACGCTGAGGCGCGAAAGCGTGGGGAGCAAACAG
GATTAGATACCCTGGTAGTCCACGCTGTAAACGATGTGTGCTAG
ATGTTGGGTAACTTTGTTATTCAGTGTCTCAGTTAACGCGTTAA
GCACACCGCCTGGGGAGTACGGCCGCAAGGTTGAAACTCAA
GGAATTGACGGGGGCCCCGCACAAGCGGTGGAGCATGTGGTTTA
ATTCGAAGCAACGCGCAGAACCTTACCAGGGCTTGAATGTAGA

GGCTGTATTCAGAGATGGATATTTCCCGCAAGGGACCTCTAACA
 CAGGTGCTGCATGGCTGTCGTCAGCTCGTGTCTGAGATGTTGG
 GTTAAGTCCCGCAACGAGCGCAACCCCTATCTTTAGTTGCCAGC
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 GAGGAAGGTGGGGATGACGTCAAGTCCTCATGGCCCTTATGTC
 CTGGGCTACACACGTGCTACAATGGCGGTGACAGTGGGAAGCT
 AGATGGTGACATCATGCTGATCTCTAAAAGCCGTCTCAGTTCGG
 ATTGCACTCTGCAACTCGAGTGCATGAAGGTGGAATCGCTAGT
 AATCGCGGATCAGCATGCCGCGGTGAATACGTTCCCGGGCCTT
 GTACACACCGCCCGTCACACCATGGGAGTTGGTTTGACCTTAA
 GCCGGTGAGCGAACCCGCAAGGGGCGCAGCCGACCACGGTCG
 GGTCCAGCGACTGGGGTGAAGTCGTAC3'

AAB Isolate 3: *Acetobacter pasteurianus* strain bh12 16S ribosomal RNA gene, partial sequence.

5'CCAATGGCGGCAGCTTACACATGCAGTCGCACGAAGGTT
 TCGGCCTTAGTGGCGGACGGGTGAGTAACGCGTAGGTATCTATC
 CATGGGTGGGGGATAACACTGGGAACTGGTGCTAATACCGCA
 TGACACCTGAGGGTCAAAGGCGCAAGTCGCCTGTGGAGGAGC
 CTGCGTTTGATTAGCTAGTTGGTGGGGTAAAGGCCTACCAAGGC
 GATGATCAATAGCTGGTTTGAGAGGATGATCAGCCACACTGGG
 ACTGAGACACGGCCCAGACTCCTACGGGAGGCAGCAGTGGGG
 AATATTGGACAATGGGGGCAACCCTGATCCAGCAATGCCGCGT
 GTGTGAAGAAGGTCTTCGGATTGTAAAGCACTTTCGACGGGGA
 CGATGATGACGGTACCCGTAGAAGAAGCCCCGGCTAACTTCGT
 GCCAGCAGCCGCGGTAATACGAAGGGGGCTAGCGTTGCTCGG
 AATGACTGGGCGTAAAGGGCGTGTAGGCGGTTTGTACAGTCAG
 ATGTGAAATCCCCGGGCTTAACCTGGGAGCTGCATTTGATACGT
 GCAGACTAGAGTGTGAGAGAGGGTTGTGGAATTCCCAGTGTAG
 AGGTGAAATTTCGTAGATATTGGGAAGAACACCGGTGGCGAAG
 GCGGCAACCTGGCTCATTACTGACGCTGAGGCGCGAAAGCGTG
 GGGAGCGGACAGGATTAGATACCCTGGTAGTCCACGCTGTAAA
 CGATGTGTGCTAGATGTTGGGTGACTTAGTCATTAGTGTGCGCA
 GTTAACGCGTTAAGCACACCGCCTGGGGAGTACGGGGCCGCGA
 GGTTGAAACTCAAAGGAATTGACGGGGGGCGCCGCACAAGCG
 GTGGAGCATGTGGTTGAATTCGAAAGCAACGCGCAGAACCTTA
 CCACGGCTTGGAGTGTAGAGGCTGCAAGCAGAGATGTTTGTTT
 CCCGCAAGGGACCTCTAACACAGGTGCTGGCGTGGCTGTCTGTC
 AGCTCGTGTCTGAGATGTTGGGTAAAGTCCCTCAGCGAGCGC
 AACCCGCTATCTTTAGTTGCCATCAAGTTTGGCCTGGGCACTCT
 AGGAGAGACTGCCAGGTGACCGAGCCCCGCACAAGGTGGGAG
 AATGACGTGAAGTCCTCATGGCCGCTTAAGGGTGGCGTGGGAC
 ACGTGCTACAATGGCGGTGACAGTGGGAAGCTAGGTGGTGAC
 ACCATGCTGATCTCTAAAAGCCGTCTCAGTTTCGGATTGCACTCT
 GCAACTCGAGTGCATGAAGGTGGAATCGCTAGTAATCGCGGAT
 CAGCATGCCGCGGTGAATACGTTCCCGGGCCTTGTACACACCG
 CCCGTCACACCATGGGAGTTGGTTTGACCTTAAGCCGGTGAGC
 GAACCGCAAGGACGCAGCCGACCACGTCGTACGCGT3'