Supporting Information

Rapid Antimicrobial Susceptibility Testing on Clinical Urine Samples by Video-based Object Scattering Intensity Detection

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S1. Background removal processing flow chart



Figure S1. Background removal processing flow chart. Step 1: Raw LVSi images recorded at 10 frames per second (A) are averaged for every 4 frames (B) to reduce noise and data size. The size of the local stack average is set to avoid cell motion induced blur. Step 2: Subtract stack local minimum (C) from (B) to remove static and slow drifting background noises (D). Stack local minimum, the minimal intensity over a short time duration for each pixel, is calculated by minimum intensity projection of a small image stack. The stack size is set to be small to remove static and slow drift noises, while retaining bacteria that move beyond the original position in order to avoid loss of signal. Step 3: Subtract stack median of all frames (E) from (D) to remove drift noises (F). Stack median is calculated by median intensity projection of each pixel for the entire video stacks. Step 4: Subtract local spatial background (G) from (F) to get the background free LVSi image (H). Spatial local background of each pixel in the image is calculated by averaging over a large ball with radius of 10 pixels around the pixel to remove large spatial variations of the background intensities. The radius should be set to at least the size of the largest object that is not part of the background.

S2. ROC curve for infection threshold determination

To determine the infection threshold, the results were evaluated using the receiver operating characteristic (ROC) curve constructed using I_{Ct}/I_{C0} as a predictor. From the ROC curve for the first 20 samples, of which

10 were positive and 10 were negative from the clinical validation, we determined the infection threshold (T_I) of 1.1 with a sensitivity of 100% and a specificity of 100% at a 90 min testing time.



Figure S2. ROC curve reveals 100% sensitivity and 100% specificity at 90 min with threshold of 1.1.

S3. OSID-AST with E. coli cultures at different concentrations

To determine the dynamic range of OSID-AST method, we performed AST with *E. coli* cultures (concentrations ranging from 10^3 to 10^7 CFU/mL). The AST results and the corresponding raw intensity and the object intensity are plotted in Figure S3. At the low concentration of 10^3 CFU/mL, both raw intensity and OSID analysis do not detect an obvious increase within 90 min. With longer testing times (170 min), the OSID analysis detects intensity increases, while raw intensity alone does not show obvious increases at the maximum time tested, 210 min. At concentrations between 10^4 and 10^7 CFU/mL, OSID method works well with the total AST time decreasing with increasing cell concentrations. Thus, the detection range of object intensity method is between 10^4 and 10^7 CFU/mL, while the raw intensity detection only accurately detects growth with concentrations above 10^6 CFU/mL. In contrast, the single cell counting method needs lower concentrations, between 10^4 and 10^5 CFU/mL, to accurately enumerate increases in bacterial cells. Therefore, OSID-AST can accept a wider dynamic range of bacterial loads, which simplifies the sample preparation process while providing robust results.



Figure S3. OSID-AST with *E. coli* cultures of concentrations of 10³ (A), 10⁴ (B), 10⁵ (C), 10⁶ (D), 10⁷ (E) CFU/mL.

S4. Calibration curve between bacterial CFU concentrations and AST time



Figure S4. Calibration between bacterial concentrations and AST time. The plating validation of initial *E. coli* concentrations at different dilutions (A). *E. coli* growth curves with different initial cell concentrations $(10^3-10^7 \text{ CFU/mL})$ (B). The calibration curve between bacterial concentration and AST time (C). The threshold for AST time determination is set at 1.1 as in panel B.

S5. Comparison of object intensity detection and single cell counting for *E. coli* and *S. saprophyticus* cultures



Figure S5. Representative results of object intensity detection and single cell counting for pure *E. coli* **(A) and** *S. saprophyticus* **(B) cultures.** Single cell counting accurately detected growth and susceptibility with *E. coli*, while object intensity accurately detected growth and susceptibility with both species.

S6. Flow chart of the clinical sample preparation, testing and validation process





Figure S6. Workflow of sample preparation, OSID-AST test and plating-based validations for clinical urine samples.

S7. Clinical urine sample ID results

Table S1. OSID-AST detection (I_{c90}/I_{c0}) results of bacteriuria infection for 130 human patient samples compared with clinical results and on-site plating validation results

Sample #	Sample ID	Color	I _{C90} /I _{C0}	OSID-AST Call	Clinical Lab Call*	Plating Validation Call#
1	ATU090319_01	Yellow	0.73776	Negative [†]	Positive	Positive
2	ATU090319_02	Yellow	5.38214	Positive	Positive	Positive
4	ATU090319_04	Brown	2.21285	Positive	Positive	Positive
6	ATU090319_06	Clear	4.48616	Positive	Positive	Positive
8	ATU090319_08	Clear	4.5611	Positive	Positive	Positive
10	ATU090319_10	Yellow	3.1863	Positive	Positive	Positive
11	ATU091019_01	Yellow	1.16772	Positive	Positive	Positive
13	ATU091019_03	Yellow	5.20085	Positive	Positive	Positive
15	ATU091019_05	Milky	0.8132	Positive	Positive	Positive
17	ATU091019_08	Cloudy	2.04065	Positive	Positive	Positive
21	ATU092419 01	Milky	6 48988	Positive	Positive	Positive
22	ATU092419 02	Milky	7,17449	Positive	Positive	Positive
26	ATU092419_06	Milky	2.53505	Positive	Positive	Positive
27	ATU092419_07	Yellow	0.80355	Negative [†]	Positive	Positive
28	ATU092419_08	Milky	0.63273	Negative [†]	Positive	Positive
31	ATU100119_01	Milky	4.073	Positive	Positive	Positive
33	ATU100119_03	Clear	3.6801	Positive	Positive	Positive
35	ATU100119_05	Clear	5.3097	Positive	Positive	Positive
36	ATU100119_06	Cloudy	6.70157	Positive	Positive	Positive
38	ATU100119_08	Cloudy	0.72527	Negative	Positive	Positive
44	ATU100819_04	Milky	7.42181	Positive	Positive	Positive
45	ATU100819_05	Milky	7.68108	Positive	Positive	Positive
40	ATU100819_00	Milky	4.12703	Positive	Positive	Positive
49 50	ATU100819_10	Milky	0.75666	Negative	Positive	Positive
51	ATU101519 01	Yellow	0.89931	Negative	Positive	Negative [†]
52	ATU101519_02	Milky	4.23241	Positive	Positive	Positive
53	ATU101519_03	Clear	5.32849	Positive	Positive	Positive
57	ATU101519_07	Milky	5.19027	Positive	Positive	Positive
58	ATU101519_08	Milky	6.19954	Positive	Positive	Positive
61	ATU102219_01	Yellow	5.12761	Positive	Positive	Positive
62	ATU102219_02	Clear	8.17162	Positive	Positive	Positive
63	ATU102219_03	Clear	2.50728	Positive	Positive	Positive
64	ATU102219_04	Clear	7.79974	Positive	Positive	Positive
59	ATU102219_09	Milky	5.60933	Positive	Positive	Positive
72	ATU102919_02	Vellow	1 13846	Positive	Positive	Positive
73	ATU102919 03	Yellow	5 47704	Positive	Positive	Positive
79	ATU102919 09	Milky	6.25799	Positive	Positive	Positive
80	ATU102919_10	Milky	2.46932	Positive	Positive	Positive
83	ATU111219_03	Cloudy	2.51224	Positive	Positive	Positive
84	ATU111219_04	Yellow	6.27751	Positive	Positive	Positive
85	ATU111219_05	Milky	0.88083	Negative†	Positive	Positive
89	ATU111219_09	Cloudy	0.72358	Negative [†]	Positive	Positive
90	ATU111219_10	Yellow	4.27291	Positive	Positive	Positive
93	ATU120319_03	Milky	4.75435	Positive	Positive	Positive
90	ATU120319_00 ATU120319_07	Cloar	4.74752	Positive	Positive	Positive
99	ATU120319_09	Milky	1.44209	Positive	Positive	Positive
100	ATU120319 10	Yellow	2 89034	Positive	Positive	Positive
102	ATU121019_02	Clear	6.36563	Positive	Positive	Positive
104	ATU121019_04	Clear	0.87916	Negative [†]	Positive	Positive
106	ATU121019_06	Cloudy	3.58189	Positive	Positive	Positive
108	ATU121019_08	Cloudy	1.6952	Positive	Positive	Positive
110	ATU121019_10	Milky	2.72788	Positive	Positive	Positive
113	ATU010720_03	Milky	2.03288	Positive	Positive	Positive
114	ATU010720_04	Milky	3.19438	Positive	Positive	Positive
116	ATU010720_06	Milky	2.32701	Positive	Positive	Positive
11/	ATU010720_07	Cloudy	1.9/96/	Positive	Positivo	Positive
170	ATU011420_04	Milky	5,88680	Positive	Positive	Positive
125	ATU011420 05	Milky	0.96676	Negative	Positive	Negative
128	ATU011420_08	Clear	2.38955	Positive	Positive	Positive
129		Cloudy	5.39929	Positive	Positive	Positive
130	ATU011420_10	Milky	1.24704	Positive	Positive	Positive

3 ATU090319_03 Clear 0.46777 Negative	Negative	Negative
5 ATU090319_05 Clear 0.6696 Negative M	Negative	Negative
7 ATU090319_07 Clear 0.81648 Negative	Negative	Negative
9 ATU090319_09 Clear 0.76041 Negative	Negative	Negative
12 ATU091019_02 Yellow 0.86645 Negative M	Negative	Negative
14 ATU091019_04 Yellow 0.93563 Negative M	Negative	Negative
16 ATU091019_06 Clear 0.80403 Negative N	Negative	Negative
19 ATU091019 09 Clear 0.90393 Negative N	Negative	Negative
20 ATU091019 10 Clear 0.88178 Negative N	Negative	Negative
23 ATU092419 03 Cloudy 0.77362 Negative N	Negative	Negative
24 ATU092419 04 Clear 0.57816 Negative	Negative	Negative
25 ATU092419 05 Clear 0 78313 Negative	Negative	Negative
29 ATU092419 09 Clear 0.76639 Negative	Negative	Negative
30 ATU092419 10 Cloudy 0.78 Negative	Negative	Negative
32 ATU10019 02 Clear 0.98838 Negative	Negative	Negative
34 ATU100119 04 Clear 0.60371 Negative	Negative	Negative
27 ATU10011_0.7 Clear 0.0074 Negative 1	Vegative	Negative
30 ATU100119.09 Miley 0.8636 Negative 1	Negative	Negative
40 ATU100119_10 Close 0.9464 Negative I	Vegative	Negative
40 ATCHORDS Clean 0.00104 Regarder 1	Vegative	Negative
41 ATO100015_01 THEIDW 0.05209 Regare 1	Vegative	Negative
42 ATO100615_02 Clear 0.83/46 Regare 1	Vegative	Negativo
4.3 ATU100015_05 YEIOW U.8/212 Negative T	Negative	Negative
4/ ATO 1006/15_0/ Clear 0.8/622 regare 1	Vegative	Negative
48 ATOTOUS19_08 Clear 0.90836 Negative r	Negative	Negative
54 ATUTOTSTIE_04 Clear 0.90369 Negative r	Negative	Negative
55 ATUTIOTSTUDIES Milky 0.61539 Negative r	Negative	Negative
56 ATU101519_06 Cloudy 0.1912 Negative r	Negative	Negative
59 ATU101519_09 Cloudy 0.48572 Negative r	Negative	Negative
60 ATU101519_10 Cloudy 0.49874 Negative r	Negative	Negative
65 ATU102219_05 Yellow 0.41149 Negative r	Negative	Negative
66 ATU102219_06 Yellow 0.6527 Negative P	Negative	Negative
67 A10102219_07 Clear 0.82163 Negative r	Negative	Negative
68 ATU102219_08 Clear 0.67353 Negative	Negative	Negative
70 ATU102219_10 Clear 0.5757 Negative	Negative	Negative
74 ATU102919_04 Yellow 0.85456 Negative	Negative	Negative
75 A1U102919_05 Miky 0.33682 Negative M	Negative	Negative
76 A10102919_06 Yellow 0.83996 Negative 1	Negative	Negative
77 ATU102919_07 Clear 0.8318 Negative	Negative	Negative
78 ATU102919_08 Clear 0.91851 Negative N	Negative	Negative
81 ATU111219_01 Yellow 0.85783 Negative	Negative	Negative
82 ATU111219_02 Yellow 0.9487 Negative M	Negative	Negative
86 ATU111219_06 Clear 0.8654 Negative M	Negative	Negative
87 ATU111219_07 Yellow 0.44171 Negative	Negative	Negative
88 ATU111219_08 Yellow 0.89734 Negative	Negative	Negative
91 ATU120319_01 Miky 0.91473 Negative	Negative	Negative
92 ATU120319_02 Yellow 0.68496 Negative	Negative	Negative
94 ATU120319_04 Yellow 0.82697 Negative	Negative	Negative
95 ATU120319_05 Yellow 0.90686 Negative N	Negative	Negative
98 ATU120319_08 Clear 0.8935 Negative M	Negative	Negative
101 ATU121019_01 Milky 0.97041 Negative N	Negative	Negative
103 ATU121019_03 Yellow 0.90842 Negative M	Negative	Negative
105 ATU121019_05 Clear 0.93901 Negative M	Negative	Negative
107 ATU121019_07 Clear 0.97536 Negative M	Negative	Negative
109 ATU121019_09 Yellow 0.88897 Negative M	Negative	Negative
111 ATU010720_01 Clear 0.92131 Negative M	Negative	Negative
112 ATU010720_02 Clear 0.94069 Negative M	Negative	Negative
145 ATLI010720 05 Olean 0.05500 Northing 1	Negative	Negative
115 AT 0010720_05 Clear 0.95538 INEGATIVE I		Manathra
119 ATU010720_09 Clear 0.95538 Negative 1 119 ATU010720_09 Clear 0.90791 Negative 1	Negative	Negative
119 ATU010720_09 Clear 0.95538 Negative N 119 ATU010720_09 Clear 0.90791 Negative N 120 ATU010720_10 Yellow 0.9299 Negative N	Negative Negative	Negative
110 ATU010720_00 Clear 0.99538 Negative I 119 ATU010720_00 Clear 0.90791 Negative I 120 ATU010720_10 Yellow 0.9299 Negative I 121 ATU011422_01 Yellow 0.91915 Negative I	Negative Negative Negative	Negative Negative Negative
ATU010720_00 Clear 0.99538 Negative F 119 ATU010720_09 Clear 0.90791 Negative F 120 ATU010720_10 Yellow 0.9299 Negative F 121 ATU011420_01 Yellow 0.91915 Negative F 122 ATU011420_02 Clear 0.92376 Negative F	Negative Negative Negative Negative	Negative Negative Negative Negative
A 100 107 20_00 Clear 0.99538 Negative I 119 A TU010720_09 Clear 0.90791 Negative I 120 A TU010720_10 Yellow 0.9299 Negative I 121 A TU011420_01 Yellow 0.91915 Negative I 122 A TU011420_02 Clear 0.92376 Negative I 123 A TU011420_03 Cloudy 0.76016 Negative I	Negative Negative Negative Negative Negative	Negative Negative Negative Negative Negative
110 A1001072_00 Clear 0.95538 Negative I 119 ATU010720_09 Clear 0.90791 Negative I 120 ATU010720_10 Yellow 0.9299 Negative I 121 ATU011420_01 Yellow 0.91915 Negative I 122 ATU011420_02 Clear 0.92376 Negative I 123 ATU011420_03 Cloudy 0.76016 Negative I 126 ATU011420_06 Clear 0.95965 Negative I	Negative Negative Negative Negative Negative Negative	Negative Negative Negative Negative Negative Negative

* Reference method (Traditional plating followed by BD Phoenix[™] automated AST) results generated by the Mayo Clinic microbiology lab.

[#]On-site validation results generated by overnight plating upon sample receiving.

[†]Disagreement between OSID-AST and reference method results.

S8. Initial sample validation results

On-site initial bacterial load validation is performed with sample plating and colony counting. Upon urine sample reception, samples were subjected to serial dilutions and plated on LB agar for colony enumeration. This plating validation provides initial bacterial concentration references and reveals any viability changes during sample storage and transportation. While 66 of 130 clinical samples were confirmed to have greater than 10³ CFU per mL, two of these contained concentrations below the clinical threshold of 10⁴ CFU/mL, and six had bacterial concentrations that were 10-100 times less than those initially determined by Mayo Clinic (Figure S7), before storage and transport. Therefore, we anticipate greater accuracy when rapid AST is performed in POC settings and this loss in bacterial viability is avoided.



Figure S7. Initial plating validation of all 66 clinically determined positive sample. The blue bar shows the initial bacterial concentration of 11 false negative samples. The red dashed lines indicate the clinical infection threshold (10^4 - 10^5 CFU/mL). The stars indicate the urine samples with initial plating concentrations less than those determined by Mayo Clinic (prior to storage and transport).

S9. Initial and parallel plating validation result of 11 false negative samples

Parallel plating validation was performed along with LVSi detection to test the samples post-preparation. Initial plating CFU/mL determinations, calculated CFU/mL based on sample dilution, and parallel plating of sample post-preparation of 11 false negatives samples are presented here. The parallel plating validation results show low counts of bacterial cells (below 1000 cells/mL), after all sample handling, including prewarming, filtration and dilution. Dilutions of these samples ranged from 10 to 1000 times such that both single cell counting and object scattering intensity could be performed. Since the OSID-AST method functions at a higher particle concentration range (10⁴ to 10⁷ CFU/mL), we estimate that 7 out of 11 of these false negative results could be avoided with an optimized dilution scheme and quicker handling process at the POC settings.



Figure S8. The comparison of initial plating, calculated CFU/mL by dilution, and the parallel plating results of 11 false negatives samples. The plating results are the mean value of three replicates. The limit of detection (LOD, blue hatched line) for initial plating (blue bar) is 100 CFU/mL. The limit of detection (LOD, green hatched line) for parallel plating (green bar) is 200 CFU/mL. When parallel plating was performed but colonies were not detected in all three replicates (sample #1, #51, #105), the samples are marked as 'Below LOD'.

S10. Examples of false negative samples by single cell counting, positive by OSID

Each sample was analyzed with both the single cell counting method and the OSID method. Two examples are presented here. The single cell counting detection, which needs extra manual cell detection and tracking processing, showed 17 false negative samples out of 130 tested samples, a 6 sample increase compared to the object intensity detection method. The OSID method measures both cell growth and elongation, while cell counting alone tracks the sum of distinct individual particles and thus detects an increase only after elongated cells divide and daughter cells separate.



Figure S9. Two examples of false negative results as determined by single cell counting, which were correctly identified as positive for infection by object intensity detection. Example of an infection positive sample that is resistant to ciprofloxacin (2 μ g/mL) (A). Example of an infection positive sample that is susceptible to ciprofloxacin (2 μ g/mL) (B).

S11. Clinical urine sample AST results

 Table 2. OSID-AST of 55 bacteriuria-positive human urine samples compared to clinical and onsite

 plating validation results

1 ATUSGN1 (P) Parates *100 000 chain. KLESSELLA PREJLUXMARE; NAM Negatore S S 2 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.2005 R R R 6 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.2031 R R R 10 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.30376 S S NT 11 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.30376 S S S 11 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.5143 R R R 12 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.7129 S S R 13 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.1729 S S R 14 ATUSGN1 (P) 1000 chain. ESCHERICHA COLI 0.1729 S S R 14 ATUSGN1 (P) 11000 chain. ESCHERICHA COLI 0.1729 S S S 14 ATUSGN1 (P) 110000 cha	Sample #	Sample ID	Comments	$\Delta I_{ABX} / \Delta I_{C}$	OSID-AST Call	Clinical Lab Call*	Plating Validation Call#
2 ATU000519_01 >100.000 churm. ESCHERICHA COLI 0.04058 R R R 6 ATU000519_01 >100.000 churm. ESCHERICHA COLI 1.28833 R R R 10 ATU000519_01 >100.000 churm. ESCHERICHA COLI 1.28833 R R R 11 ATU000519_01 >100.000 churm. ESCHERICHA COLI 0.24834 S S NTT 12 ATU001019_00 >100.000 churm. ESCHERICHA COLI 0.01426 S S S 13 ATU01010_00 >100.000 churm. ESCHERICHA COLI NA Negativer S S 14 ATU0010_00 >100.000 churm. ESCHERICHA COLI 0.1736 S S NT 2 ATU02419_02 >100.000 churm. ESCHERICHA COLI 0.17376 S S S 2 ATU02419_02 >100.000 churm. ESCHERICHA COLI 0.17376 S S S 2 ATU02419_02 >100.000 churm. ESCHERICHA COLI 0.17378 S S S 2 ATU02419_0	1	ATU090319_01	2 Isolates: >100,000 cfu/mL KLEBSIELLA PNEUMONIAE ; 10,000-100,000 cfu/mL ENTEROCOCCUS FAECALIS	N/A	Negative [†]	S	S
4 ATU000319, 6 >10000 clmml, ESCHERICHA COLI 0.03015 S S N 6 ATU00319, 6 >10000 clmml, ESCHERICHA COLI 0.0891 S S N 10 ATU00319, 10 >100.000 clmml, ESSELERICHA COLI 0.01844 S S S 11 ATU031019, 01 >100.000 clmml, ESSELERICHA COLI 0.01424 S S 11 ATU031019, 01 >100.000 clmml, ESCHERICHA COLI 0.01737 S S S 11 ATU031019, 01 >100.000 clmml, ESCHERICHA COLI 0.01737 S S NTT 12 ATU031019, 01 >100.000 clmml, ESCHERICHA COLI 0.0173 S S NTT 21 ATU03140, 01 >100.000 clmml, ESCHERICHA COLI 0.0174 S S NT 21 ATU03140, 01 >100.000 clmml, ESCHERICHA COLI 0.0184 S S S 21 ATU03140, 01 >100.000 clmml, ESCHERICHA COLI 0.0184 R R NT 21 ATU03140, 01	2	ATU090319 02	>100,000 cfu/mL ESCHERICHIA COLI	0.94068	R	R	R
6 ATU00319, 6 >100.00 cluum, ESCHERICH COLU 1.2883 R R R R R 10 ATU00319, 6 >100.00 cluum, ESCHERICH COLU 0.3876 S NT 11 ATU00319, 0 >100.00 cluum, ESCHERICH COLU 0.3876 S S S 13 ATU00319, 0 >100.00 cluum, ESCHERICH COLU NA Negative S S 14 ATU00319, 0 >100.00 cluum, ESCHERICH COLU NA Negative S S 15 ATU00319, 0 >100.00 cluum, ESCHERICH COLU 0.1737 S S NT 24 ATU002419, 02 100.00 cluum, ESCHERICH COLU 0.1737 S S NT 26 ATU002419, 02 100.00 cluum, ESCHERICH COLU 0.1737 S S S 27 ATU002419, 02 100.00 cluum, ESCHERICH COLU 0.1743 S S S 28 ATU100319, 04 100.00 cluum, ESCHERICH COLU 0.0143 S S S 29 ATU100519, 0	4	ATU090319_04	>100,000 cfu/mL ESCHERICHIA COLI	0.03015	S	S	NT
8 ATU000319_10 >100,000 ch/mL CALL -0.00981 S S NT 10 ATU00019_00 >100,000 ch/mL ESCHERICHA COLI -0.03376 S S NT 11 ATU001019_00 >100,000 ch/mL ESCHERICHA COLI 0.01428 S S 11 ATU001019_00 >100,000 ch/mL ESCHERICHA COLI NA Negative1 S S 12 ATU001019_07 >100,000 ch/mL ESCHERICHA COLI 0.01377 S S NT 12 ATU00241_00 >100,000 ch/mL ESCHERICHA COLI 0.01378 S NT 21 ATU00241_00 >100,000 ch/mL ESCHERICHA COLI 0.01448 S S S 23 ATU0241_00 >100,000 ch/mL ESCHERICHA COLI 0.001418 S S S 24 ATU0241_00 >100,000 ch/mL ESCHERICHA COLI 0.001418 S S S 25 ATU0241_00 100,000 ch/mL ESCHERICHA COLI 0.001418	6	ATU090319_06	>100,000 cfu/mL ESCHERICHIA COLI	1.26833	R	R	R
11 ATU00319_01 >100.00 clrum, ESCHERCHA COLI -0.3376 S S NTT 13 ATU05119_01 >100.00 clrum, ESCHERCHA COLI 0.1426 S S 14 ATU05119_05 >100.00 clrum, ESCHERCHA COLI NA Negative S 15 ATU05119_05 >100.00 clrum, ESCHERCHA COLI 0.1476 S S 16 ATU05219_0 >100.00 clrum, ESCHERCHA COLI 0.1776 S S NT 21 ATU05249_0 >100.00 clrum, ESCHERCHA COLI 0.1776 S S NT 22 ATU05249_0 >100.00 clrum, ESCHERCHA COLI 0.1177 S S NT 28 ATU05249_0 >100.00 clrum, ESCHERCHA COLI 2.30-64 S NT 31 ATU1019_0 >100.00 clrum, ESCHERCHA COLI 0.0184 S S 34 ATU0519_0 >100.00 clrum, ESCHERCHA COLI 0.0434 S S 34 ATU1019_0 >100.00 clrum, ESCHERCHA COLI 0.0434 S S <td< td=""><td>8</td><td>ATU090319_08</td><td>>100,000 cfu/mL ESCHERICHIA COLI</td><td>-0.05981</td><td>S</td><td>S</td><td>NT</td></td<>	8	ATU090319_08	>100,000 cfu/mL ESCHERICHIA COLI	-0.05981	S	S	NT
11 ATU091019_03 100.000 clumL ESCHERICHA COLL 0.3576 S S S 13 ATU091019_05 100.000 clumL ESCHERICHA COLL NAA Megativer S 14 ATU09101_07 100.000 clumL CRAM REATIVE BACILLUS 0.56815 R R R 18 ATU09101_07 100.000 clumL ESCHERICHA COLL 0.1729 S S NT 21 ATU09210_07 100.000 clumL ESCHERICHA COLL 0.1729 S S NT 22 ATU09210_07 100.000 clumL ESCHERICHA COLL 0.1729 S S NT 31 ATU09210_07 100.000 clumL ESCHERICHA COLL 0.1434 S S S 31 ATU00110_00 100.000 clumL ESCHERICHA COLL 0.0434 S S S 33 ATU01010_00_000 0.000 clumL ESCHERICHA COLL 0.0434 S S S 34 ATU01010_00_000 0.000 clumL ESCHERICHA COLL 0.046514 R R NT 35 ATU101010_00_000 0.00	10	ATU090319_10	>100,000 cfu/mL KLEBSIELLA AEROGENES	0.24834	S	S	S
113 ATU091012.08 100.000 clumL ESCHERCHA COLL 0.01426 S S 17 ATU091010.08 100.000 clumL CRAM NECATIVE BACILLIS 1.75005 R R R R 18 ATU09101.08 100.000 clumL CRAM NECATIVE BACILLIS 0.54515 R R R R 21 ATU09210.02 100.000 clumL ESCHERCHA COLL 0.01376 S S NT 22 ATU092410.02 100.000 clumL ESCHERCHA COLL 0.01948 S S S 23 ATU092410.02 100.000 clumL ESCHERCHA COLL 2.364-44 S S NT 24 ATU092410.02 100.000 clumL ESCHERCHA COLL 0.96454 R R NT 25 ATU100110.08 100.000 clumL ESCHERCHA COLL 0.94344 S S S 26 ATU010110.08 100.000 clumL ESCHERCHA COLL 0.94433 R R R 27 ATU01018.08 100.000 clumL ESCHERCHA COLL 0.94433 R R R 28	11	ATU091019_01	>100,000 cfu/mL ESCHERICHIA COLI	-0.35376	S	S	NT
15 AT JUG1910 pp 100.000 chuhu ESCAH MCATIVE BACILLUS IXAM NegativeT R R 16 AT JUG1910 pp 100.000 chuhu ESCAH MCATIVE BACILLUS 0.56815 R R R 17 AT JUG210 pp 100.000 chuhu ESCHERICHA COLI 0.1729 S S NT 12 AT JUG2210 pp 100.000 chuhu ESCHERICHA COLI 0.1729 S S S 13 AT JUG2210 pp 100.000 chuhu ESCHERICHA COLI 0.0144 N NegativeT R R 13 AT JUG2210 pp 100.000 chuhu ESCHERICHA COLI 2.30E-04 S S NT 15 AT JUG0110 pp 100.000 chuhu ESCHERICHA COLI 0.94843 R R NT 16 AT JUG0110 pp 100.000 chuhu ESCHERICHA COLI 0.04943 R R NT 17 AT JUG0110 pp 100.000 chuhu ESCHERICHA COLI 0.0491 S S S 18 AT JUG0110 pp 100.000 chuhu ESCHERICHA COLI 101173 R R R R 19 AT JUG0110 pp 100.000 chuhu ESCHERICHA COLI 104251 S	13	ATU091019_03	>100,000 cfu/mL ESCHERICHIA COLI	0.01426	S	S	S
11 ATU091012 0*10.000 chuni, CRAM NECATIVE BACILLUS 1.76005 R R R R 21 ATU0921012, 0*100.000 chuni, ESCHERICHA COLI 0.01376 S S NT 22 ATU092210, 0*100.000 chuni, ESCHERICHA COLI 0.01376 S S NT 26 ATU092210, 0*100.000 chuni, ESCHERICHA COLI 0.01948 S S S 27 ATU092210, 0*100.000 chuni, ESCHERICHA COLI 2.06644 S S NT 31 ATU100110, 0*100.000 chuni, ESCHERICHA COLI 0.069614 R R NT 33 ATU100110, 0*100.000 chuni, ESCHERICHA COLI 0.04334 S S S 34 ATU100110, 0*100.000 chuni, ESCHERICHA COLI 0.04334 S S S 36 ATU100110, 0*1000.00 chuni, ESCHERICHA COLI 0.04334 S S S 36 ATU1001010, 0*1000.00 chuni, ESCHERICHA COLI 0.0434 S S S 37 ATU1001010, 0*1000.00 chuni, ESCHERICHA COLI 0.0434 S S S <	15	ATU091019_05	>100,000 cfu/mL ESCHERICHIA COLI	N/A	Negative [†]	S	S
18 ATUG91019 >>>>>>>>>>>>>>>>>>>>>>>>>>>>	17	ATU091019_07	>100,000 cfu/mL GRAM NEGATIVE BACILLUS	1.76005	R	R	R
21 ATU092419_07 100.000 chull, ESCHERICHI ACOLI 0.01376 S S NT 22 ATU092419_07 100.000 chull, ESCHERICHI ACOLI 0.1729 S S NT 26 ATU092419_07 100.000 chull, ESCHERICHI ACOLI NA Negativer S S 27 ATU092419_07 100.000 chull, ESCHERICHI ACOLI -0.09904 S S NT 31 ATU100119_05 100.000 chull, ESCHERICHI ACOLI -0.09904 S S NT 35 ATU100119_05 100.000 chull, ESCHERICHI ACOLI 0.04334 S S S 36 ATU100119_05 100.000 chull, ESCHERICHI ACOLI 0.04334 S S NT 47 ATU100119_05 100.000 chull, ESCHERICHI ACOLI 0.04341 S S S 48 ATU100119_01 100.000 chull, ESCHERICHI ACOLI 1.04128 R R R 49 ATU100119_01 100.000 chull, ESCHERICHI ACOLI NIA Negativeri S S 410101011	18	ATU091019_08	>100,000 cfu/mL GRAM NEGATIVE BACILLUS	0.56815	R	R	R
22 ATU092419_02 >100.000 chimL ESCHERICHA COLI 0.1729 S S 26 ATU092419_07 >100.000 chimL ESCHERICHA COLI NIA Negative1 R 31 ATU109119_03 >100.000 chimL ESCHERICHA COLI 2.30E-64 S S NT 33 ATU109119_03 >100.000 chimL ESCHERICHA COLI 2.30E-64 S S NT 34 ATU109119_05 >100.000 chimL ESCHERICHA COLI 0.395614 R R NT 36 ATU109119_05 >100.000 chimL ESCHERICHA COLI 0.39443 S S S 36 ATU109119_05 >100.000 chimL ESCHERICHA COLI 0.0119 S	21	ATU092419_01	>100,000 cfu/mL ESCHERICHIA COLI	0.01376	S	S	NT
26 ATU092419_07 100.000 chum, ENTEROBACTER CLOACAE 0.01948 S S 27 ATU092419_07 100.000 chum, EGAN MEGATVE BACILLUS N/A Negativer S 28 ATU092419_07 100.000 chum, EGAN MEGATVE BACILLUS N/A Negativer R R 31 ATU100119_05 100.000 chum, ESCHERICHA COLI -0.09961 S S NT 36 ATU100119_05 100.000 chum, ESCHERICHA COLI -0.04341 S S S 36 ATU100119_05 100.000 chum, ESCHERICHA COLI -0.035614 R R NT 46 ATU100819_05 100.000 chum, ESCHERICHA COLI 0.0119 S S S 51 ATU100819_05 100.000 chum, ESCHERICHA COLI NA Negativer S NT 52 ATU100819_07 100.000 chum, ESCHERICHA COLI NA Negativer S NT 53 ATU10819_07 100.000 chum, ESCHERICHA COLI NA Negativer S NT 54 ATU10819_07	22	ATU092419_02	>100,000 cfu/mL ESCHERICHIA COLI	0.1729	S	S	NT
27 ATU092419_07 100.000 chund, GRAN NEGATURE BACILLUS NA Negative1 S S 31 ATU100119_07 100.000 chund, ESCHERICHIA COLI 2.30E-64 S S NT 33 ATU100119_07 100.000 chund, ESCHERICHIA COLI 0.95614 R R NT 36 ATU100119_06 100.000 chund, ESCHERICHIA COLI 0.95614 R R NT 36 ATU100119_06 100.000 chund, ESCHERICHIA COLI 0.94334 S S S 37 ATU100181_06 100.000 chund, ESCHERICHIA COLI 0.0191 S S NT 46 ATU100181_09 100.000 chund, ESCHERICHIA COLI 0.02571 S S S 51 ATU10181_9 100.000 chund, ESCHERICHIA COLI NIA Negative1 S S S 52 ATU10181_9 100.000 chund, ESCHERICHIA COLI NIA Negative1 S S S 53 ATU10181_9 100.000 chund, ESCHERICHIA COLI 0.02571 S S S	26	ATU092419_06	>100,000 cfu/mL ENTEROBACTER CLOACAE	0.01948	S	S	S
28 AFU082419_06 10.000-10000 chum. CSCHERICHIA COLI 2.30E-04 S S NT 33 ATU10119_05 100.000 chum. ESCHERICHIA COLI -0.09991 S S NT 36 ATU10119_05 100.000 chum. ESCHERICHIA COLI 0.04334 S S S 36 ATU101919_05 100.000 chum. ESCHERICHIA COLI 0.94843 R R NT 36 ATU100191_06 100.000 chum. ESCHERICHIA COLI 0.04334 S S S 44 ATU100819_06 100.000 chum. ESCHERICHIA COLI 0.04843 R R R 46 ATU100819_06 100.000 chum. ESCHERICHIA COLI NIA Negative1 S S 51 ATU101519_01 100.000 chum. ESCHERICHIA COLI NIA Negative1 S S 52 ATU101519_02 100.000 chum. ESCHERICHIA COLI NIA Negative1 S S 53 ATU101519_02 100.000 chum. ESCHERICHIA COLI NIA Negative1 S S 54	27	ATU092419_07	>100,000 cfu/mL GRAM NEGATIVE BACILLUS	N/A	Negative [†]	S	S
31 AFU101919_0 >100.000 chulm_ESOHERICHA COLI 2.06:04 S S NT 33 ATU101919_0 >100.000 chulm_ESOHERICHA COLI 0.059614 R R NT 36 ATU101919_0 >100.000 chulm_ESOHERICHA COLI 0.04334 S S S 36 ATU100191_0 >100.000 chulm_ESOHERICHA COLI 0.04334 S S NT 46 ATU100819_0 >100.000 chulm_ESOHERICHA COLI 0.01919 S S NT 46 ATU100819_0 >100.000 chulm_ESOHERICHA COLI NA Negativet S S 51 ATU100819_0 >100.000 chulm_ESOHERICHA COLI NA Negativet S NT 52 ATU101519_0 >100.000 chulm_ESOHERICHA COLI NA Negativet S NT 53 ATU101519_0 >100.000 chulm_ESOHERICHA COLI 0.02027 S S NT 54 ATU101519_0 >100.000 chulm_ESOHERICHA COLI 0.02027 S S NT 53 ATU10	28	ATU092419_08	10,000-100,000 cfu/mL GRAM NEGATIVE BACILLUS	N/A	Negative†	R	R
33 AFU1011919_05 >100.000 chumL ESCHERICHA COLI -0.05991 S S NT 36 ATU101919_06 >100.000 chumL ESCHERICHA COLI 0.04334 S S S 36 ATU101919_06 >100.000 chumL ESCHERICHA COLI 0.94843 R R NT 44 ATU100819_06 >100.000 chumL ESCHERICHA COLI 0.94843 R R NT 45 ATU100819_06 >100.000 chumL ESCHERICHA COLI 0.02571 S S S 46 ATU100819_01 100.000 chumL ESCHERICHA COLI NA Negativeir S S 51 ATU10519_02 >100.000 chumL ESCHERICHA COLI NA Negativeir S S 52 ATU10519_02 >100.000 chumL ESCHERICHA COLI 0.00864 S S NT 53 ATU10519_02 >100.000 chumL ESCHERICHA COLI 0.40516 S S S 54 ATU10519_02 >100.000 chumL ESCHERICHA COLI 0.4551 S S S 56 ATU10	31	ATU100119_01	>100,000 cfu/mL ESCHERICHIA COLI	2.30E-04	S	S	NT
36 ATU1011919_05 >100.000 tmlm ESCHERICHIA COLI 0.04334 S S 38 ATU101919_06 >100.000 tmlm EGNERICHIA COLI 0.04334 S S 44 ATU101919_06 >100.000 tmlm ESCHERICHIA COLI 0.0194 S S S 44 ATU100819_06 >100.000 tmlm ESCHERICHIA COLI 0.0191 S S S 45 ATU100819_06 >100.000 tmlm ESCHERICHIA COLI 0.02971 S S S 46 ATU100819_10 >100.000 tmlm ESCHERICHIA COLI 0.02571 S S N 50 ATU101519_02 >100.000 tmlm ESCHERICHIA COLI N/A Negativeir S S 51 ATU101519_02 >100.000 tmlm ESCHERICHIA COLI 0.04553 S S NT 52 ATU101519_02 >100.000 tmlm ESCHERICHIA COLI 0.04553 S S S 53 ATU101519_03 >100.000 tmlm ESCHERICHIA COLI 0.04574 R R NT 54 ATU102219_02 >100.000 tmlm ESCHERICHIA COLI 0.05586 S	33	ATU100119_03	>100,000 cfu/mL ESCHERICHIA COLI	-0.09991	S	S	NT
36 A U1010110_0 >100.000 chum. ESCHERICHA COLI 0.04334 S S 36 ATU100101_0 >100.000 chum. ESCHERICHA COLI 0.94433 R R NT 44 ATU100101_0 >100.000 chum. ESCHERICHA COLI 0.0119 S S NT 46 ATU10011_0 >100.000 chum. ESCHERICHA COLI 0.0171 S S S 50 ATU10011_0 10.000 chum. ESCHERICHA COLI NA Negative! S S 51 ATU10111_0 10.000 chum. ESCHERICHA COLI NA Negative! S S 52 ATU101111_0 100.000 chum. ESCHERICHA COLI NA Negative! S S 53 ATU101111_0 100.000 chum. ESCHERICHA COLI 0.04571 S S S 54 ATU101111_0 100.000 chum. ESCHERICHA COLI 0.45396 R R NT 55 ATU10212_0 100.000 chum. ESCHERICHA COLI 0.07314 S S S 56 ATU10221_0 100.000 chum. E	35	ATU100119_05	>100,000 cfu/mL ESCHERICHIA COLI	0.95614	R	R	NT
38 A LUDUTU_08 > 100.000 chum. ESCHERICHA COLI NA Negativet S S 44 ATUT0819_05 > 100.000 chum. ESCHERICHA COLI 0.0119 S S NT 46 ATUT0819_05 > 100.000 chum. ESCHERICHA COLI 1.19128 R R R 46 ATUT0819_05 > 100.000 chum. ESCHERICHA COLI 1.19128 R R R 50 ATUT0819_07 100.000 chum. ESCHERICHA COLI NA Negativet S S 51 ATUT01519_02 100.000 chum. ESCHERICHA COLI NA Negativet S NT 52 ATUT01519_02 100.000 chum. ESCHERICHA COLI 0.14571 S S S 54 ATU101519_03 100.000 chum. ESCHERICHA COLI 0.07596 S S S 56 ATU10219_01 100.000 chum. ESCHERICHA COLI 0.08574 R R NT 61 ATU102219_03 100.000 chum. ESCHERICHA COLI 0.02956 S S S S 71	36	ATU100119_06	>100,000 ctu/mL ESCHERICHIA COLI	0.04334	S	S	S
44 ALD100819_04 >100,000 chum, ESCHERICH ACUL 0,04943 R R N 45 ATU109810_05 >100,000 chum, ESCHERICH ACUL 1,19128 R R R 44 ATU109810_05 >100,000 chum, ESCHERICH ACUL NA Negative1 S S 50 ATU10919_10 10,000 chum, ESCHERICH ACUL NA Negative1 S S 51 ATU101519_02 >100,000 chum, ESCHERICH ACUL NA Negative1 S S 52 ATU101519_02 >100,000 chum, ESCHERICH ACUL 0.4071 S S S 53 ATU101519_07 >100,000 chum, ESCHERICH ACUL 0.41471 S S S 64 ATU10219_01 >100,000 chum, ESCHERICH ACUL 0.40396 S S NT 64 ATU10219_02 >100,000 chum, ESCHERICH ACUL 0.8396 R R NT 64 ATU102219_02 >100,000 chum, ESCHERICH ACUL 0.8634 R S S 71 ATU102219_02	38	ATU100119_08	>100,000 cfu/mL GRAM NEGATIVE BACILLUS	N/A	Negative	S	S
46 Al U100819_05 >100,000 clum, ESCHERICHIA COLI 0.0119 S S N1 46 ATU100819_06 >100,000 clum, ESCHERICHIA COLI 0.02571 S S S 50 ATU100819_00 >100,000 clum, ESCHERICHIA COLI N/A Negativeri S NT 52 ATU10519_01 >100,000 clum, ESCHERICHIA COLI N/A Negativeri S NT 53 ATU10519_02 >100,000 clum, ESCHERICHIA COLI -0.00586 S NT 54 ATU10519_07 >100,000 clum, ESCHERICHIA COLI -0.14571 S S S 56 ATU10219_01 >100,000 clum, ESCHERICHIA COLI -0.07596 S S NT 61 ATU102219_02 >100,000 clum, ESCHERICHIA COLI -0.03596 R R NT 63 ATU102219_03 >100,000 clum, ESCHERICHIA COLI -0.03856 S NT 64 ATU102219_03 >100,000 clum, ESCHERICHIA COLI -0.03856 S S 71 ATU102219_00 >100,000 cl	44	ATU100819_04	>100,000 cfu/mL ESCHERICHIA COLI	0.98483	R	R	NI
40 Al U100819_06 >100,000 clumi, ESCHERICHA COLI 1.19128 R R R R 49 ATU106919_10 10,000-clumi, ESCHERICHA COLI NIA Negativeir S S 50 ATU101519_02 >100,000 clumi, ESCHERICHA COLI NIA Negativeir S NT 51 ATU101519_02 >100,000 clumi, ESCHERICHA COLI -00958 S S NT 53 ATU101519_07 >100,000 clumi, ESCHERICHA COLI -0.04579 S S NT 56 ATU101519_08 >100,000 clumi, ESCHERICHA COLI -0.04579 S S NT 61 ATU102219_02 >100,000 clumi, ESCHERICHA COLI -0.0596 S S NT 62 ATU102219_09 >100,000 clumi, KLEBSIELLA PNEUMONIAE 0.125 S NT 64 ATU102219_09 >100,000 clumi, KLEBSIELLA SP 0.4051 S S 71 ATU102219_09 >100,000 clumi, KLEBSIELLA SP 0.4051 S S 72 ATU102219_09 <	45	ATU100819_05	>100,000 cfu/mL ESCHERICHIA COLI	0.0119	S	S	NI
49 Altotionsing_09 Youngo etumin, Esc-HERICHIA COLI U.025/1 S S S 50 ATU101519_01 100.000-tumin, ESC-HERICHIA COLI NIA Negativei S NT 51 ATU101519_01 100.000-tumin, ESCHERICHIA COLI -0.0688 S S NT 53 ATU101519_03 >100.000 ctumin, ESCHERICHIA COLI -0.14571 S S S 56 ATU101519_07 >100.000 ctumin, ESCHERICHIA COLI -0.07596 S S NT 61 ATU102219_01 >100.000 ctumin, ESCHERICHIA COLI -0.07596 S S NT 62 ATU102219_03 >100.000 ctumin, ESCHERICHIA COLI 0.8574 R R NT 64 ATU102219_04 >100.000 ctumin, ESCHERICHIA COLI -0.03695 S NT 71 ATU102219_03 >100.000 ctumin, ESCHERICHIA COLI -0.13695 S NT 72 ATU102219_03 >100.000 ctumin, ESCHERICHIA COLI -0.03695 S S S 73 ATU102	46	ATU100819_06		1.19128	R	R	R
bb/bit A 10 1018 [9], 10 100.000 ch/mL ESCHERICHIA COLI N/A Negativer S NT 51 A TU 1015 [9], 2 100.000 ch/mL ESCHERICHIA COLI -0.00858 S S NT 52 A TU 1015 [9], 07 100.000 ch/mL ESCHERICHIA COLI 0.14571 S S S NT 56 A TU 1015 [9], 07 100.000 ch/mL ESCHERICHIA COLI 0.07596 S S NT 61 A TU 1022 [9], 01 100.000 ch/mL ESCHERICHIA COLI 0.085396 R R NT 62 A TU 1022 [9], 01 100.000 ch/mL ESCHERICHIA COLI 0.08574 R R NT 64 A TU 1022 [9], 04 100.000 ch/mL ESCHERICHIA COLI 0.0265 S S NT 72 A TU 1022 [9], 01 100.000 ch/mL ESCHERICHIA COLI 0.03695 S S S 73 A TU 1022 [9], 01 100.000 ch/mL ESCHERICHIA COLI 0.06239 S S S 74 A TU 1029 [9], 01 100.000 ch/mL ESCHERICHIA COLI 0.06239 S S	49	ATU100819_09		0.02571	S No motiviset	S	S
b1 ATO 1015 9_01 2100.000 clumL ESCHERICHIA COLI NA Negative S NT 52 ATU 1015 9_01 2100.000 clumL ESCHERICHIA COLI -0.00668 S S NT 53 ATU 1015 19_03 2100.000 clumL ESCHERICHIA COLI 0.14571 S S S 56 ATU 1015 19_08 2100.000 clumL ESCHERICHIA COLI -0.07596 S S NT 61 ATU 1022 19_01 2100.000 clumL ESCHERICHIA COLI -0.85396 R R NT 62 ATU 1022 19_04 >100.000 clumL ESCHERICHIA COLI -0.85396 R R NT 64 ATU 1022 19_04 >100.000 clumL ESCHERICHIA COLI -0.03695 S S NT 71 ATU 1022 19_04 >100.000 clumL ESCHERICHIA COLI -0.03695 S S S 72 ATU 1023 19_03 >100.0000 clumL ESCHERICHIA COLI -0.03695 S S S 73 ATU 1029 19_03 >100.0000 clumL ESCHERICHIA COLI -0.03695 S S S	50	ATU100819_10		N/A	Negative	S	S
02 A10101319_02 3100.000 clum. LESO-HERIXCHIA COLI -0.00000 S S S NT 53 ATU101519_07 >100.000 clum. LESO-HERIXCHIA COLI 0.14571 S S S 54 ATU101519_07 >100.000 clum. ESO-HERIXCHIA COLI 0.017966 S S S 56 ATU102219_02 >100.000 clum. ESO-HERIXCHIA COLI 0.85396 R R NT 62 ATU102219_04 >100.000 clum. ESO-HERIXCHIA COLI 0.85396 R R NT 64 ATU102219_04 >100.000 clum. ESO-HERIXCHIA COLI -0.03695 S S NT 64 ATU102219_04 >100.000 clum. ESO-HERIXCHIA COLI -0.03695 S S NT 71 ATU102919_02 >100.000 clum. ESO-HERIXCHIA COLI -0.03695 S S S 72 ATU102919_02 >100.000 clum. ESO-HERIXCHIA COLI -0.06739 S S S 73 ATU102919_04 >100.000 clum. ESO-HERIXCHIA COLI -0.06739 S S NT <tr< td=""><td>51</td><td>ATU101519_01</td><td></td><td>N/A</td><td>Negative</td><td>5</td><td></td></tr<>	51	ATU101519_01		N/A	Negative	5	
3 ATU101512_0 > 100,000 cluim. ESCHERICH ACUL 0.44671 S S S 57 ATU101512_0 > 100,000 cluim. ESCHERICHIA COLL 0.30196 S S S 58 ATU101219_02 > 100,000 cluim. ESCHERICHIA COLL 0.07596 S S NT 62 ATU102219_02 > 100,000 cluim. ESCHERICHIA COLL 0.85396 R R NT 63 ATU102219_02 > 100,000 cluim. ESCHERICHIA COLL 0.8674 R R NT 64 ATU102219_04 > 100,000 cluim. LESCHERICHIA COLL 0.8675 S S NT 69 ATU102219_09 > 100,000 cluim. ESCHERICHIA COLL -1.14431 S S S 71 ATU102919_03 > 100,000 cluim. ESCHERICHIA COLL 0.07311 S S S 73 ATU102919_03 > 100,000 cluim. ESCHERICHIA COLL 0.09926 S S S 74 ATU102919_01 > 100,000 cluim. ESCHERICHIA COLL -0.06239 S NT 84 A	52	ATU101519_02		-0.00656	5	5	
37 ATU101519_0 >100,000 cluim. EGAN INSCRIVE BACILLUS 0.140/11 5 S S 58 ATU101519_0 >100,000 cluim. EGCHERICHIA COLI -007596 S S NT 61 ATU102219_01 >100,000 cluim. ESCHERICHIA COLI -007596 S S NT 62 ATU102219_03 >100,000 cluim. ESCHERICHIA COLI 0.85336 R R NT 64 ATU102219_04 >100,000 cluim. ESCHERICHIA COLI 0.8574 R R NT 69 ATU102219_01 >100,000 cluim. ESCHERICHIA COLI -0.03695 S S S 71 ATU102219_01 >100,000 cluim. ESCHERICHIA COLI -0.03695 S S S 72 ATU102919_02 >100,000 cluim. ESCHERICHIA COLI 0.077311 S S S 73 ATU102919_09 >100,000 cluim. ESCHERICHIA COLI -0.06239 S S NT 84 ATU11219_03 >100,000 cluim. ESCHERICHIA COLI -0.46337 R NT NT <t< td=""><td>53</td><td>ATU101519_03</td><td></td><td>0.20227</td><td>5</td><td>5</td><td>111</td></t<>	53	ATU101519_03		0.20227	5	5	111
31 ATU 101219_01 100.000 clulm. ESCHERICHIA COLI 0.07596 S S NT 62 ATU 102219_02 100.000 clulm. ESCHERICHIA COLI 0.8396 R R NT 63 ATU 102219_04 100.000 clulm. ESCHERICHIA COLI 0.8674 R R NT 64 ATU 102219_04 100.000 clulm. ESCHERICHIA COLI 0.8674 R R NT 64 ATU 102219_04 100.000 clulm. ESCHERICHIA COLI 0.1025 S S S 71 ATU 102219_09 100.000 clulm. ESCHERICHIA COLI -0.03695 S S S 72 ATU 102919_02 >100.000 clulm. ESCHERICHIA COLI 0.09926 S S S 79 ATU 102919_03 >100.000 clulm. ESCHERICHIA COLI -0.06929 S S NT 84 ATU 11219_03 >100.000 clulm. ESCHERICHIA COLI -0.0299 S NT 84 ATU 11219_04 >100.000 clulm. ESCHERICHIA COLI -0.0299 S NT 84 ATU 11219_04 >100.000 clulm. ESCHERICHIA COLI -0.0114 NA Negativet NA	58	ATU101519_07		0.14371	5	5	5
62 ATTU102219_02 >100,000 clumL ESCHERICHIA COLI 0.88396 R R NTT 63 ATU102219_03 >100,000 clumL ESCHERICHIA COLI 0.8874 R R NTT 64 ATU102219_09 >100,000 clumL KLEBSIELLA PNEUMONIAE 0.1025 S S NTT 69 ATU102219_09 >100,000 clumL KLEBSIELLA PNEUMONIAE 0.1025 S S NTT 71 ATU102919_01 >100,000 clumL ESCHERICHIA COLI -0.03695 S S S 72 ATU102919_03 >100,000 clumL ESCHERICHIA COLI 0.07311 S S S 73 ATU102919_09 >100,000 clumL ESCHERICHIA COLI 0.07311 S S S 80 ATU11219_04 >100,000 clumL KLEBSIELLA PNEUMONIAE 0.13194 S S S 81 ATU111219_05 10,000-1000 clumL KLEBSIELLA PNEUMONIAE 0.13194 S S S 84 ATU111219_06 10,000 clumL ESCHERICHIA COLI 1.4651 R R NT	61	ATU102219 01	>100,000 cfu/mL ESCHERICHIA COLL	-0.07596	s	s	NT
63 ATU102219_03 >100,000 clumL ESCHERICHIA COLI 0.8874 R R NT 64 ATU102219_04 >100,000 clumL ESCHERICHIA COLI 0.8874 R R NT 69 ATU102219_01 >100,000 clumL ESCHERICHIA COLI -0.03695 S S NT 71 ATU102919_02 >100,000 clumL ESCHERICHIA COLI -1.14431 S S S 73 ATU102919_03 >100,000 clumL ESCHERICHIA COLI 0.07311 S S S 73 ATU102919_09 >100,000 clumL ESCHERICHIA COLI 0.07311 S S S 80 ATU102919_09 >100,000 clumL ESCHERICHIA COLI 0.07311 S S S 81 ATU11219_04 >100,000 clumL ESCHERICHIA COLI 0.06239 S S NT 84 ATU11219_05 100,000 clumL ESCHERICHIA COLI 0.13194 S S NT 89 ATU11219_09 >100,000 clumL ESCHERICHIA COLI 1.42551 R R NT 90 A	62	ATU102219_02	>100,000 cfu/mL ESCHERICHIA COLL	0.85396	R	R	NT
64 ATU102219_04 >100,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.1025 S S NT 69 ATU102219_07 >100,000 cfu/mL ESCHERICHIA COLI -0.03695 S S NT 71 ATU102919_02 >100,000 cfu/mL ESCHERICHIA COLI -1.14431 S S S 72 ATU102919_02 >100,000 cfu/mL ESCHERICHIA COLI 0.07311 S S S 73 ATU102919_03 >100,000 cfu/mL ESCHERICHIA COLI 0.07311 S S S 80 ATU102919_10 >100,000 cfu/mL ESCHERICHIA COLI 0.06239 S S NT 84 ATU11219_05 100,000 cfu/mL ESCHERICHIA COLI -0.06239 S S NT 85 ATU111219_05 100,000 cfu/mL ESCHERICHIA COLI -0.06239 S NT 86 ATU111219_05 100,000 cfu/mL ESCHERICHIA COLI 0.06239 S NT 87 ATU111219_05 100,000 cfu/mL ESCHERICHIA COLI 0.02734 S S 80 ATU11219_03 >100,000 cfu	63	ATU102219_03	>100,000 cfu/mL ESCHERICHIA COLI	0.8574	R	R	NT
69 ATU12219_09 >100,000 cfu/mL KLEBSIELLA sp 0.4051 S S S 71 ATU102219_01 >100,000 cfu/mL ESCHERICHIA COLI -0.03695 S S NT 72 ATU102919_02 >100,000 cfu/mL ESCHERICHIA COLI -1.14431 S S S 73 ATU102919_09 >100,000 cfu/mL ESCHERICHIA COLI 0.07311 S S S 80 ATU102919_09 >100,000 cfu/mL ESCHERICHIA COLI 0.06239 S S NT 81 ATU111219_03 >100,000 cfu/mL ESCHERICHIA COLI -0.06239 S S NT 84 ATU111219_04 >100.000 cfu/mL REDSIELLA PNEUMONIAE 0.13194 S S NT 85 ATU111219_09 >100,000 cfu/mL REDSUDOMONAS AERUGINOSA N/A Negativet ¹ N/A S 90 ATU111219_09 >100,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 91 ATU120319_06 >100,000 cfu/mL ESCHERICHIA COLI 1.02651 R S NT	64	ATU102219 04	>100.000 cfu/mL KLEBSIELLA PNEUMONIAE	0.1025	s	s	NT
71 ATU102919_01 >100,000 ctu/mL ESCHERICHIA COLI -0.03695 S S NT 72 ATU102919_02 >100,000 ctu/mL ESCHERICHIA COLI -1.14431 S S S 73 ATU102919_02 >100,000 ctu/mL ESCHERICHIA COLI 0.09926 S S S 80 ATU102919_09 >100,000 ctu/mL ESCHERICHIA COLI 0.09926 S S S 81 ATU102919_03 >100,000 ctu/mL ESCHERICHIA COLI 0.09026 S S NT 84 ATU11219_04 >100,000 ctu/mL ESCHERICHIA COLI 0.0926 S S NT 85 ATU11219_04 >100,000 ctu/mL KLEBSIELLA PNEUMONIAE 0.13194 S S NT 86 ATU1120_19_0 >100,000 ctu/mL ESCHERICHIA COLI 0.22734 S S S 90 ATU120319_03 >100,000 ctu/mL ESCHERICHIA COLI 1.45551 R R NT 91 ATU120319_09 >100,000 ctu/mL ESCHERICHIA COLI 1.05551 R S S 92 </td <td>69</td> <td>ATU102219 09</td> <td>>100.000 cfu/mL KLEBSIELLA sp</td> <td>0.4051</td> <td>s</td> <td>s</td> <td>S</td>	69	ATU102219 09	>100.000 cfu/mL KLEBSIELLA sp	0.4051	s	s	S
72 ATU102919_02 >100.000 ct/umL ESCHERICHIA COLI -1.14431 S S S 73 ATU102919_03 >100.000 ct/umL ESCHERICHIA COLI 0.07311 S S S 79 ATU102919_09 >100.000 ct/umL ESCHERICHIA COLI 0.09926 S S S 80 ATU112919_01 >100.000 ct/umL ESCHERICHIA COLI -0.06239 S S NT 84 ATU111219_04 >100.000 ct/umL KLEBSIELLA PNEUMONIAE NA Negative! R NT 85 ATU111219_05 100.000 ct/umL KLEBSIELLA PNEUMONIAE NA Negative! NA NT 86 ATU112019_05 100.000 ct/umL KLEBSIELLA PNEUMONIAE NA Negative! NA S 90 ATU1120319_03 >100.000 ct/umL ESCHERICHIA COLI 1.12652 R R NT 91 ATU120319_07 10.0000 ct/umL ESCHERICHIA COLI 1.02655 S S NT 92 ATU120319_02 >100.000 ct/umL ESCHERICHIA COLI 0.07618 S S 9	71	ATU102919 01	>100,000 cfu/mL ESCHERICHIA COLI	-0.03695	S	S	NT
73 ATU102919_03 >100,000 clumL ESCHERICHIA COLI 0.07311 S S S 79 ATU102919_09 >100,000 clumL ESCHERICHIA COLI 0.09926 S S S 80 ATU102919_00 >100,000 clumL ESCHERICHIA COLI -0.06239 S S NT 84 ATU111219_04 >100,000 clumL KLEBSIELLA PNEUMONIAE 0.13194 S S NT 85 ATU111219_05 10,000 clumL KLEBSIELLA PNEUMONIAE 0.13194 S S NT 86 ATU11219_06 10,000 clumL ESCHERICHIA COLI -0.06239 S NT 87 ATU11219_07 10,000 clumL ESCHERICHIA COLI 0.13194 S S NT 89 ATU112019_07 >100,000 clumL ESCHERICHIA COLI 0.2266 S N/A S 90 ATU120319_07 100,000 clumL ESCHERICHIA COLI 1.12652 R R NT 97 ATU120319_07 100,000 clumL ESCHERICHIA COLI 1.045551 R S S 90 ATU120319_00	72	ATU102919 02	>100,000 cfu/mL ESCHERICHIA COLI	-1.14431	S	S	S
79 ATU102919_09 >100,000 cfu/mL ESCHERICHIA COLI 0.09926 S S S 80 ATU102919_10 >100,000 cfu/mL ESCHERICHIA COLI 1.14637 R* S S 83 ATU111219_03 >100,000 cfu/mL ESCHERICHIA COLI -0.06239 S S NT 84 ATU111219_04 >100,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.13194 S S NT 85 ATU111219_05 100,000 cfu/mL KLEBSIELLA PNEUMONIAE N/A Negative1 R NT 89 ATU112019_05 100,000 cfu/mL ESCHERICHIA COLI 0.22766 S N/A S 90 ATU120319_07 100,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 91 ATU120319_07 100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 92 ATU120319_07 100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S S 100 ATU12019_02 100,000 cfu/mL ESCHERICHIA COLI 0.0105 S S S	73	ATU102919_03	>100,000 cfu/mL ESCHERICHIA COLI	0.07311	S	S	S
80 ATU102919_10 >100,000 cfu/mL CITROBACTER FREUNDII COMPLEX 1.14637 R ^a S S 83 ATU111219_03 >100,000 cfu/mL ESCHERICHIA COLI -0.06239 S S NT 84 ATU111219_05 10,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.13194 S S NT 85 ATU111219_05 10,000 cfu/mL KLEBSIELLA PNEUMONIAE N/A Negative! R NT 89 ATU111219_05 >100,000 cfu/mL ESCHERICHIA COLI 0.2266 S N/A S 90 ATU120319_03 >100,000 cfu/mL ESCHERICHIA COLI 0.22734 S S S 91 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI 1.146551 R R NT 92 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 93 ATU12019_02 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 94 ATU12019_04 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S S	79		>100,000 cfu/mL ESCHERICHIA COLI	0.09926	S	S	S
83 ATU111219_03 >100,000 cfu/mL ESCHERICHIA COLI -0.06239 S S NT 84 ATU111219_04 >100,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.13194 S S NT 85 ATU111219_05 100,000 cfu/mL KLEBSIELLA PNEUMONIAE N/A Negative! R NT 89 ATU111219_05 100,000 cfu/mL PSEUDOMONAS AERUGINOSA N/A Negative! N/A S 90 ATU111219_05 >100,000 cfu/mL ESCHERICHIA COLI 0.22734 S S S 91 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 92 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 93 ATU120319_07 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 94 ATU120319_07 >100,000 cfu/mL ESCHERICHIA COLI 0.4055 S S NT 102 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.4057 S S NT	80	ATU102919_10	>100,000 cfu/mL CITROBACTER FREUNDII COMPLEX	1.14637	Rª	S	S
84 ATU111219_04 >100,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.13194 S S NT 85 ATU111219_05 10,000 cfu/mL KLEBSIELLA PNEUMONIAE N/A Negative1 R NT 89 ATU111219_07 >100,000 cfu/mL PSEUDOMONAS AERUGINOSA N/A Negative1 N/A S 90 ATU111219_10 >100,000 cfu/mL ESCHERICHIA COLI 0.2266 S N/A S 91 ATU120319_03 >100,000 cfu/mL ESCHERICHIA COLI 0.22734 S S S 96 ATU120319_07 100,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 97 ATU120319_07 100,000 cfu/mL ESCHERICHIA COLI 0.45551 R R NT 99 ATU120319_07 100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S NT 100 ATU12019_02 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 108 ATU1219_19_0 >100,000 cfu/mL ESCHERICHIA COLI 0.27158 S NT 11	83	ATU111219_03	>100,000 cfu/mL ESCHERICHIA COLI	-0.06239	S	S	NT
85 ATU111219_05 10,000-100,000 cfu/mL KLEBSIELLA PNEUMONIAE N/A Negative! R NT 89 ATU111219_10 >100,000 cfu/mL PSEUDOMONAS AERUGINOSA N/A Negative! N/A S 90 ATU11219_10 >100,000 cfu/mL ESCHERICHA COLI 0.2266 S N/A S 93 ATU120319_03 >100,000 cfu/mL ESCHERICHIA COLI 0.22734 S S 96 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 97 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 100 ATU120319_09 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 102 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.40655 S S S 106 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT <t< td=""><td>84</td><td>ATU111219_04</td><td>>100,000 cfu/mL KLEBSIELLA PNEUMONIAE</td><td>0.13194</td><td>S</td><td>S</td><td>NT</td></t<>	84	ATU111219_04	>100,000 cfu/mL KLEBSIELLA PNEUMONIAE	0.13194	S	S	NT
89 ATU111219_09 >100,000 cfu/mL PSEUDOMONAS AERUGINOSA N/A Negative! N/A S 90 ATU111219_10 >100,000 cfu/mL ENTEROBACTER CLOACAE 0.2266 S N/A S 93 ATU120319_00 >100,000 cfu/mL ESCHERICHIA COLI 0.22734 S S S 96 ATU120319_07 10,000-tfu/mL ESCHERICHIA COLI 1.12652 R R NT 97 ATU120319_07 10,000-tfu/mL ESCHERICHIA COLI 1.45551 R R NT 99 ATU120319_00 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 100 ATU120319_02 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S S 100 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S S 101 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT	85	ATU111219_05	10,000-100,000 cfu/mL KLEBSIELLA PNEUMONIAE	N/A	Negative [†]	R	NT
90 ATU111219_10 >100,000 cfu/mL ENTEROBACTER CLOACAE 0.2266 S N/A S 93 ATU120319_03 >100,000 cfu/mL ESCHERICHIA COLI 0.22734 S S S 96 ATU120319_06 >100,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 97 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI 1.45551 R R NT 99 ATU120319_01 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 100 ATU120319_02 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 102 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 108 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.03975 S S NT 110 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.03975 S S NT <t< td=""><td>89</td><td>ATU111219_09</td><td>>100,000 cfu/mL PSEUDOMONAS AERUGINOSA</td><td>N/A</td><td>Negative[†]</td><td>N/A</td><td>S</td></t<>	89	ATU111219_09	>100,000 cfu/mL PSEUDOMONAS AERUGINOSA	N/A	Negative [†]	N/A	S
93 ATU120319_03 >100,000 cfu/mL ESCHERICHIA COLI 0.22734 S S S 96 ATU120319_05 >100,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 97 ATU120319_07 10,000 cfu/mL ESCHERICHIA COLI 1.45551 R R NT 99 ATU120319_09 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 100 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 102 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 106 ATU121019_05 >100,000 cfu/mL ESCHERICHIA COLI 0.40575 S S NT 108 ATU121019_03 >100,000 cfu/mL ESCHERICHIA COLI 0.03975 S S NT 110 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.01511 S S NT 113 ATU010720_03 >100,000 cfu/mL ESCHERICHIA COLI 0.01551 S <td< td=""><td>90</td><td>ATU111219_10</td><td>>100,000 cfu/mL ENTEROBACTER CLOACAE</td><td>0.2266</td><td>S</td><td>N/A</td><td>S</td></td<>	90	ATU111219_10	>100,000 cfu/mL ENTEROBACTER CLOACAE	0.2266	S	N/A	S
96 ATU120319_06 >100,000 cfu/mL ESCHERICHIA COLI 1.12652 R R NT 97 ATU120319_07 10,000-fu/mL ESCHERICHIA COLI 1.45551 R R NT 99 ATU120319_09 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 100 ATU120319_10 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 102 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 108 ATU121019_06 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 110 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.4057 S S NT 110 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI 0.03975 S S NT 111 ATU010720_04 >100,000 cfu/mL ESCHERICHIA COLI 0.01551 S S S 11	93	ATU120319_03	>100,000 cfu/mL ESCHERICHIA COLI	0.22734	S	S	S
97 ATU120319_07 10,000-100,000 cfu/mL ESCHERICHIA COLI 1.45551 R R NT 99 ATU120319_09 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 100 ATU120319_10 >100,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.10105 S S NT 102 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI N/A Negativet S S 106 ATU121019_06 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 108 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R S NT 110 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R S NT 110 ATU121019_01 >100,000 cfu/mL ESCHERICHIA COLI 0.02158 S NT 113 ATU010720_03 >100,000 cfu/mL ESCHERICHIA COLI -0.00101 S S S	96	ATU120319_06	>100,000 cfu/mL ESCHERICHIA COLI	1.12652	R	R	NT
99 ATU120319_09 >100,000 cfu/mL ESCHERICHIA COLI -0.07618 S S NT 100 ATU120319_10 >100,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.10105 S S NT 102 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI N/A Negative1 S S 106 ATU121019_06 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 108 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 108 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.4057 S S NT 110 ATU1010720_03 >100,000 cfu/mL ESCHERICHIA COLI 0.03975 S S NT 114 ATU010720_04 >100,000 cfu/mL ESCHERICHIA COLI 0.01551 S S S 116 ATU010720_07 >100,000 cfu/mL ESCHERICHIA COLI 0.95502 R R R	97	ATU120319_07	10,000-100,000 cfu/mL ESCHERICHIA COLI	1.45551	R	R	NT
100 ATU120319_10 >100,000 cfu/mL KLEBSIELLA PNEUMONIAE 0.10105 S S NT 102 ATU121019_02 >100,000 cfu/mL ESCHERICHIA COLI 0.40565 S S S 104 ATU121019_04 >100,000 cfu/mL ESCHERICHIA COLI N/A Negativet S S 106 ATU121019_06 >100,000 cfu/mL ESCHERICHIA COLI 0.87237 R R NT 108 ATU121019_08 >100,000 cfu/mL ESCHERICHIA COLI 0.27158 S S NT 110 ATU121019_10 >100,000 cfu/mL ESCHERICHIA COLI 0.27158 S S NT 110 ATU121019_03 >100,000 cfu/mL ESCHERICHIA COLI 0.27158 S S NT 111 ATU01072_03 >100,000 cfu/mL ESCHERICHIA COLI 0.03975 S S NT 113 ATU01072_04 >100,000 cfu/mL ESCHERICHIA COLI -0.00101 S S NT 114 ATU01072_07 >100,000 cfu/mL ESCHERICHIA COLI 0.01551 S S S 116 ATU01072_04 >100,000 cfu/mL ESCHERICHIA COLI 0.95502 R <td>99</td> <td>ATU120319_09</td> <td>>100,000 cfu/mL ESCHERICHIA COLI</td> <td>-0.07618</td> <td>S</td> <td>S</td> <td>NT</td>	99	ATU120319_09	>100,000 cfu/mL ESCHERICHIA COLI	-0.07618	S	S	NT
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* Reference method (Traditional plating followed by BD Phoenix[™] automated AST) results generated by the Mayo Clinic microbiology lab.

[#]On-site validation results generated by overnight plating upon sample receiving.

[†]False negative results by OSID-AST.

^a Mis-categorization occurred if reference method indicated susceptible and OSID-AST indicated resistant.

S12. Clinical Sample # 80

For AST of 55 positive samples, one susceptible sample was mis-categorized as resistant by OSID-AST (Sample # 80, Supporting Information S11, Table S2), which contains >100,000 CFU/mL *Citrobacter freundii* Complex. To elucidate this inconsistency, a validation experiment was performed. Since the original clinical sample was no longer available, we used cryogenically-preserved clinical sample # 80 for this validation experiment. Briefly, frozen cells were inoculated onto LB agar and incubated overnight (~ 15 h) at 37 °C. Then, bacteria were spiked into pooled urine (BioIVT Human Urine Pooled Gender) with a concentration of ~ 10⁹ CFU/mL and stored at 4 °C overnight to simulate clinical sample conditions. For LVSi imaging, the spiked urine sample were processed as the flowchart in Figure S6 for OSID-AST detection, and high magnification microscopy (80×) images were recorded during AST detection for morphology validation.

LVSi video and high magnification images ($80 \times$ microscopic imaging) of the cultured isolates from the sample were shown in Figure S10, and obvious elongation of the bacteria under 2 µg/mL ciprofloxacin were detected, which induced object intensity increase in OSID-AST system similar to the control (antibiotic free) sample within the 90 min measurement time (Figure S10 A & B). With longer measurement times, the normalized growth curve with 2 µg/mL ciprofloxacin (Figure S10 C & D) plateaued around 2 h after the intensity roughly doubled, which means the cells stopped growing after reaching maximum length, as the antibiotics prevented DNA replication and cell division. In contrast, the cells without antibiotics grew exponentially. Therefore, for this elongation case, longer detection time is needed for accurate OSID-AST detection (Figure S10 C & D).



Data from Clinical Sample # 80

Figure S10. Background removed LVSi images at different time points and object intensity curves for clinical sample #80 (A, B) and cryogenically-preserved clinical sample #80 (C, D) without (A, C) and with antibiotics (B, D). The insets in C and D are the corresponding high magnification (80×) cell image for morphology validation.

S13. MIC determination for OSID-AST

The minimum inhibitory concentration (MIC) of ciprofloxacin and nitrofurantoin were determined for OSID-AST with 90 min exposure of different concentrations of the antibiotic. The normalized object intensity (I_{90}/I_0) of *E. coli* cells with 0 µg/mL, 0.5 µg/mL, 1 µg/mL, 2 µg/mL, 4 µg/mL, and 8 µg/mL ciprofloxacin were calculated for the inhibition curve plot (Supporting Information Figure S11A), while the nitrofurantoin concentrations tested were 0 µg/mL, 4 µg/mL, 8 µg/mL, 16 µg/mL, 32 µg/mL, 64 µg/mL and 128 µg/mL (Supporting Information Figure S11B). The MIC value is defined as no growth in object intensity where normalized object intensity equals 1 (dashed lines in Figure S11). The MIC value is determined to be 1 µg/mL for ciprofloxacin and 4 µg/mL for nitrofurantoin.



Figure S11. The inhibition curves of OSID-AST after 90 min exposure of ciprofloxacin (A) and nitrofurantoin (B). The MIC value is determined by the minimum concentration that no growth induced object intensity increase (dashed lines) detected by OSID-AST.