**Electronic Supplementary Information (ESI)** 

## A rapid tag-free identification of Escherichia coli antibiotic-resistant isolates using Raman scattering

Figure S1 MLST (A) forward and (B) reverse sequencing of *adk* gene for ST131 *E. coli* strain 5.
Figure S1 MLST (C) forward and (D) reverse sequencing of *fumC* gene for ST131 *E. coli* strain 5.
Figure S1 MLST (E) forward and (F) reverse sequencing of *gyrB* gene for ST131 *E. coli* strain 5.
Figure S1 MLST (G) forward and (H) reverse sequencing of *icd* gene for ST131 *E. coli* strain 5.
Figure S1 MLST (I) forward and (J) reverse sequencing of *mdh* gene for ST131 *E. coli* strain 5.
Figure S1 MLST (K) forward and (L) reverse sequencing of *purA* gene for ST131 *E. coli* strain 5.
Figure S1 MLST (M) forward and (N) reverse sequencing of *recA* gene for ST131 *E. coli* strain 5.
Figure S2 FE-SEM images of *E. coli* isolates.

File: Eco5_adk_F1_E01_009.ab1		Geospiza www.geospiza.com	File: Eco5_adk_R1_E02_010.ab1	Geospiza www.geospiza.com
Sample Name: Eco5_adk_F1 Mobility: KB_3130_POP7_BDTv3.mob Spacing: 12.4716 Comment: n/a	Signal Strengths: A = 251, C = 25 Lane/Cap#: 9 Matrix: n/a Direction: Native	I, G = 270, T = 263	Sample Name: Eco5_adk_R1 Mobility: KB_3130_POP7_BDTv3.mob Spacing: 12_5398 Comment: n/a	Signal Strengths: A = 216, C = 283, G = 256, T = 299 Lane(Cap): 10 Matrix: n/a Direction: Native
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Fig. S1 MLST (A) forward and (B) reverse sequencing of *adk* gene for ST131 *E. coli* strain 5.

File: Eco5_fumC_F1_E03_009.ab1 Geospiza	File: Eco5_fumC_R1_E04_010.ab1 Geospiza.com
Signal Strengths:         A = 168, C = 205, G = 245, T = 235           Mobility:         KB, Slap DOP7_JDDTv3.mob         Lanc Carpit:         9           Spacing:         12.4666         Matrix:         n <sup>6</sup> Commert:         n <sup>6</sup> Direction:         Native	Sample Name:         EcoS funce:         R1         Signal Strengths:         A = 239, C = 238, G = 270, T = 236           Mobility:         K13.09 (2077)_ EDDTV3.mob         Lane Capit'         Matrix:         10           Spacing:         12.4184         Matrix:         10         10         10           Comment:         ná         Direction:         Natrix:         Natrix:         10
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Fig. S1 MLST (C) forward and (D) reverse sequencing of *fumC* gene for ST131 E. coli strain 5.

Signal Strengths:         A = 199, C = 241, G = 223, T = 253           Mobility:         KB 3130; POP7 JBDTv3.mob         LaneCapit:           Sparsing:         12, 4064         Mutrix:	Sample Name: Eco5_gyrB_R2 Signal St	www.geospiza.com
Comment: n/a Direction: Native	Mobility: KB_3130_POP7_BDTv3.mob Lan Spacing: 12.3667 Comment: n/a Di	rengths: A = 233, C = 277, G = 257, T = 288 e'Cap#: 10 Matrix: n'a irection: Native
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Fig. S1 MLST (E) forward and (F) reverse sequencing of gyrB gene for ST131 E. coli strain 5.

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Sample Name:         Ecc5 : jed F1         Signal Strengths:         A = 288, C = 273, G = 374, T = 351           Mobility:         KB 3130 P0P7_BDTv3.mob         LaneCapf:         9           Spncing:         12.514         Marity: n/a           Comment:         n/a         Direction:         Naive	Sample Name:         Eco5 icd R1         Signal Strengths:         A = 244, C = 290, G = 273, T = 331           Mobility:         KB 3130 [POP7_BDTv3.mob         Lanc Cap#:         10           Spacing:         12.3791         Matrix:         n'a           Comment:         n'a         Direction:         Native	
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Fig. S1 MLST (G) forward and (H) reverse sequencing of *icd* gene for ST131 *E. coli* strain 5.

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Sample Name:         Eco5_mdh_F2         Signal Strengths:         A = 173, C = 161, G = 214, T = 164           Mobility:         KB_3130_P07_BDTv3.mob         LaneCapi: 9         Matrix: n in           Spacing:         L28314         Matrix: n in           Comment:         n/a         Direction: Native	Sample Name:         Eco5_mdh_R2         Signal Strengths:         A = 251, C = 257, G = 318, T = 339           Mobility:         KB 3130_FOP7_BDTv3.mob         LaneCapit:         10           Spacing:         12.8954         Matrix:         ni           Comment:         n/a         Direction:         Native
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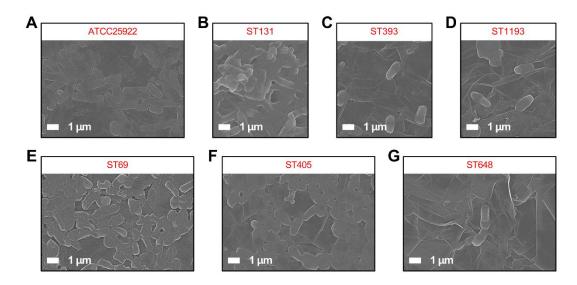
Fig. S1 MLST (I) forward and (J) reverse sequencing of *mdh* gene for ST131 *E. coli* strain 5.

File: Eco5_purA_F2_E07_009.ab1 Geospiza	File: Eco5_purA_R2_E08_010.ab1	Geospiza www.geospiza.com
Sample Name:         Eco5_purA_F2         Signal Strengths:         A = 310, C = 416, G = 338, T = 469         Mobility:         KB = 3130, FOP_BDTv3.mob         LaneCapit:         9         Matrix:         n/a         Matrix:         n/a         Matrix:         n/a         Direction:         Native	Sample Name: EcoS purA R2 Signal Strengths: A = 233, G Mobility: KB_3130_POP7_BDTv3.mob LaneCap#: IO Spacing: 12:2377 Matrix: n/n Comment: n/n Direction: Native	
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Fig. S1 MLST (K) forward and (L) reverse sequencing of *purA* gene for ST131 E. coli strain 5.

ile: Eco5_recA_F2_E11_009.ab1 Geospita com	File: Eco5_recA_R2_E12_010.ab1	Geospi www.geospiza.co
mple Name:         ExoS (recA, F2         Signal Strongths:         A = 297, C = 372, G = 361, T = 402         Mobility:         KB 3130_POPT_BDTv3.mob         Lane Cap#:         9         Moti Tage         Materia         Materia         Materia         Materia         Materia         Materia         Materia         Materia         Moti Tage         Materia	Sample Name: Eco5_recA_R2 Mobility: KB_3130_POP7_BDTv3.mob Spacing: 12.4003 Comment: n/a	Signal Strengths: A = 229, C = 244, G = 257, T = 250 Lane/Cap#: 10 Matrix: n/a Direction: Native
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Fig. S1 MLST (M) forward and (N) reverse sequencing of *recA* gene for ST131 *E. coli* strain 5.



**Fig. S2** FE-SEM images of (A) *E. coli* ATCC25922, (B) *E. coli* ST131, (C) *E. coli* ST393, (D) *E. coli* ST1193, (E) *E. coli* ST69, (F) *E. coli* ST405, and (G) *E. coli* ST648 isolates.