Electronic Supplementary Material (ESI) for Lab on a Chip.

Electronic Supplementary Information

Fully automated and colorimetric foodborne pathogen detection on an integrated centrifugal microfluidic device

Seung Jun Oh, Byung Hyun Park, Goro Choi, Ji Hyun Seo, Jae Hwan Jung, Jong Seob Choi, Do Hyun Kim and Tae Seok Seo[a]*

Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea.

Table S1. Primer sequence information for the multiplexed LAMP reaction

Target gene / Accession #	Primer	Sequence (5' to 3')	Length [bp]
E. coli O157:H7 fliC gene (CP002967.1 : 2147323-2149017)	FIP	CTACCAACCTGTCTGAAGCGCATCGACATGTTGGACACTTCG	42
	BIP	GGTGACTGCGGAATCCAGACGTGAGGCAATTGCATCCATCG	41
	F3	GCCTGCTGGATGATCTGC	18
	B3	CGGCTCTGCAACCAAAGA	18
S. Typhimurium invA gene (M90846.1)	FIP	TCCGCGACACGTTCTGAACCCTCTATTGTCACCGTGGTCC	40
	BIP	TGCCGATTTGAAGGCCGGTACAGTACGCTTCGCCGTTC	38
	F3	GCGGTGGGTTTTGTTGTCT	19
	B3	CGTAAAGCTGGCTTTCCCTT	20
V. parahaemolyticus toxR gene (L11929.1)	FIP	TCGACTCCACATTCACTCGATTACTGATAACTTGCCAGACG	41
	BIP	CCTGCCGAATGGCGATTACAATTAATTGTCGATTCAGCCG	40
	F3	CAACCATGGTGACTGTGA	18
	B3	CCAGCGACCTTTCTCTGA	18
L. monocytogenes iap gene (JQ015300.1)	FIP	ATCAAATGTAGTTGGTCCGTTACCAGCTGAAGCTCAAAAACACC	44
	BIP	ATGTATTTGCTAAAGCGGGAATCTGTAGTGCTAGCGTATTGTGC	44
	F3	AATTCAAGTGCAAGTGCTAT	20
	B3	GTTTTGCTTGAGATTCAGAGA	21

Fig. S1. Singleplex *Listeria monocytogenes* detection on the lab-on-a-disc. A real sample containing 10^4 cells of *L. monocytogenes* was used. Colour change was only observed in the reaction chamber #4, where the LAMP primer set targeting *L. monocytogenes* had been pre-stored, which confirmed specific detection of that bacteria species.

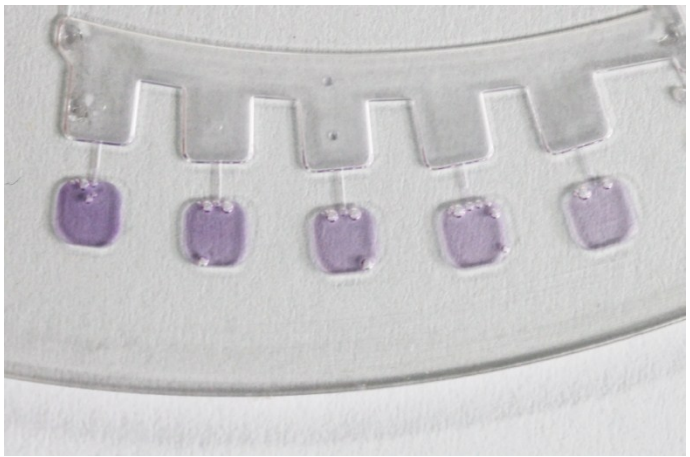

Fig. S2. Negative control experiments using a real sample spiked with non-pathogenic *Escherichia coli* K-12. No colour change was shown in the reaction chambers. This result proves the ability of this assay to distinguish bacteria sub-types within *E. coli* species.