Supplementary 1 2 3 Development of fluorescent distance-based paper device using loop-mediated isothermal amplification to detect Escherichia coli in urine 6 7 Natkrittaya Saengsawang, a Toon Ruang-areerate, b,* Piyanate Kesakomol, c Thunyapit Thita, d Mathirut Mungthin, b and Wijitar Dungchai a,** 10 11 12 a) Analytical Chemistry, Department of Chemistry, Faculty of Science, King Mongkut's 13 University of Technology Thonburi 14 b) Department of Parasitology, Phramongkutklao College of Medicine c) Department of Microbiology, Phramongkutklao College of Medicine 16 d) Drug Research Unit for Malaria, Faculty of Tropical Medicine, Mahidol University 17 18 19 20 21 Corresponding authors: *Asst. Prof. Dr. Toon Ruang-areerate and **Asst. Prof. Dr. Wijitar Dungchai 22 23 *E-mail: youangtr@yahoo.com; Fax: +66-2-354-7761; Tel: +66-2-354-7761 **E-mail: wijitar.dun@kmutt.ac.th; Fax: +66-2-470-8840; Tel: +66-2-470-9553 24 25 26 27

NA HA PA NB HB PB NC HC PC

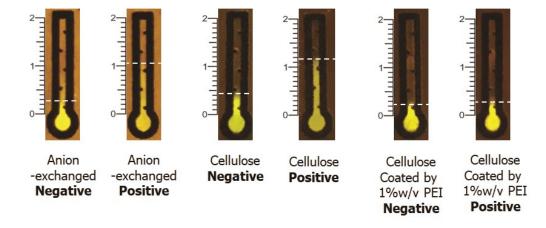
N=Negative (no *E. coli*)
P=Positive (*E. coli*)
H=Human genomic (no *E. coli*)

A=60°C B=63°C C=65°C

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- 29 Fig S1. The amplification of LAMP products at different incubation temperatures observed
- 30 by agarose gel electrophoresis: negative, no E. coli DNA control; positive, 106 CFU mL⁻¹ of
- 31 E. coli DNA

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- Fig S2. The detection of LAMP assay using distance-based paper device by using different
- 35 type of paper (anion-exchanged paper, cellulose and cellulose coated by 1%w/v PEI):
- 36 negative, no E. coli DNA control; positive, 10⁴ CFU mL⁻¹ of E. coli DNA.