Supporting Information

Molecular diagnostic system using engineered fusion protein conjugated magnetic nanoparticles

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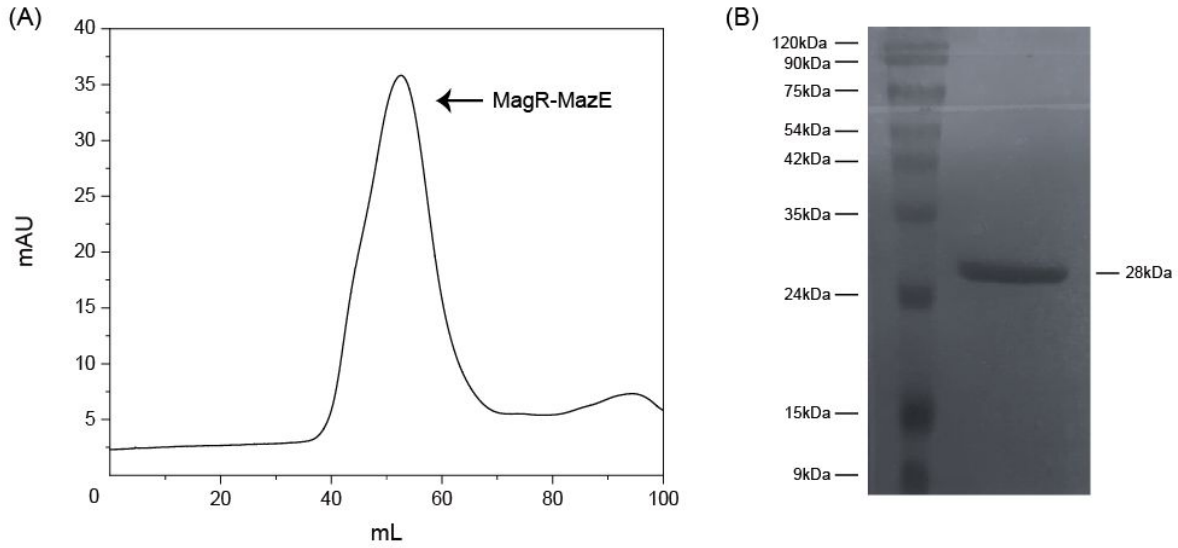

Figure S1. (A) Purification of MagR-MazE fusion protein using fast protein liquid chromatography, and (B) identification of the protein through SDS PAGE.

Figure S2. The sequence of the randomly generated dsDNA which used in PCR experiments by lengths: 50 bp, 75 bp, 100 bp, 150 bp, 300bp, and 500 bp.

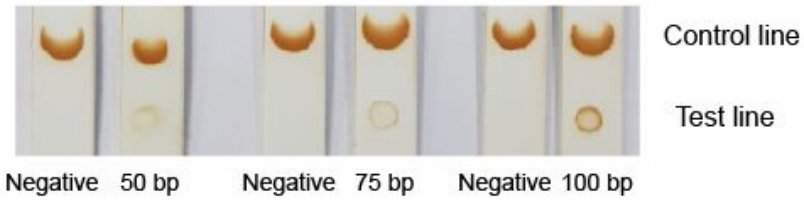

Figure S3. Detection of the short-length PCR amplicons on the proposed lateral flow assay (LFA) platform. Comparison of signal intensity of 5 nM of the amplified dsDNA by length: 50 bp, 75 bp, and 100 bp. Negative sample (PCR was performed without template gene for negative sample) were also tested.

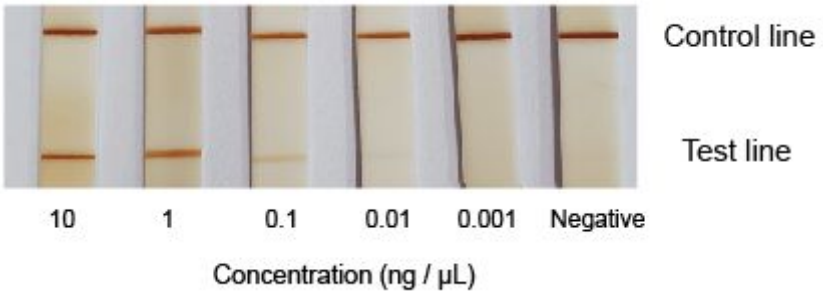

Figure S4. Detection of the PCR products of 2019-nCoV-N-Positve control gene. Diverse concentration of the PCR products: 0.001, 0.01, 0.1, 1, 10 ng / μL, and negative sample (PCR was performed without 2019-nCoV-N-Positve control gene for negative sample) were tested.