

Supporting Information

Molecular diagnostic system using engineered fusion protein conjugated magnetic nanoparticles

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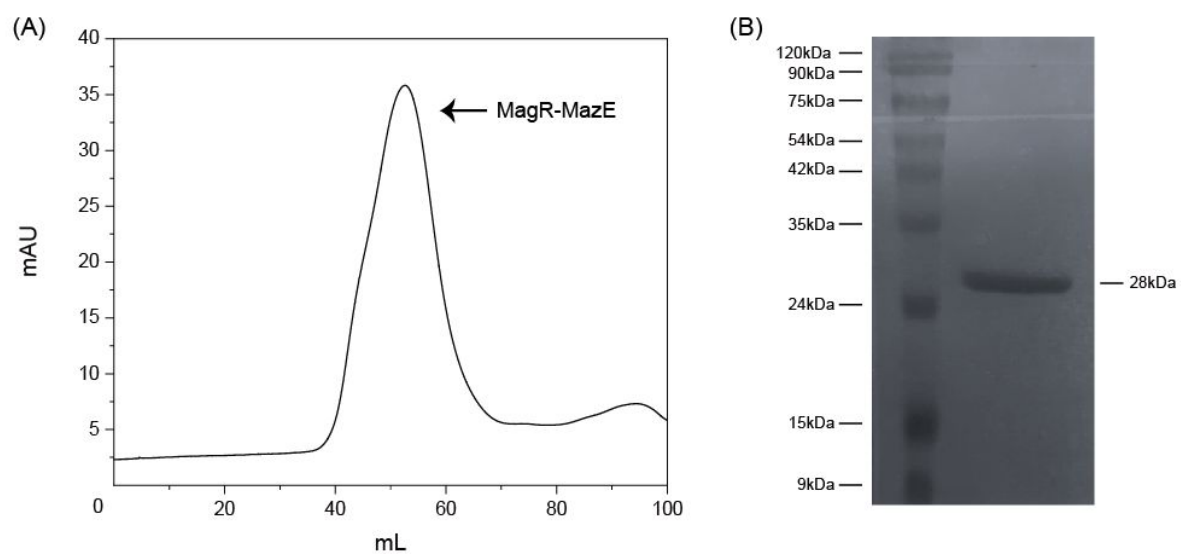


Figure S1. (A) Purification of MagR-MazE fusion protein using fast protein liquid chromatography, and (B) identification of the protein through SDS PAGE.

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┌ ATGTCGGGAC GTAATGTGGA ATCCCATATG GAACGTAATG AGAAGGTCGT 50 ┘
AGTCAATAAT TCGGGGCACG CAGAT75GTAA AAAACAACAA CAGCAGGTCG 100 ┘
AACACACTGA GTTTACACAC ACGGAAGTTA AGGCGCCCTT GATTCATCCT 150 ┘
GCACCGCCTA TTATCAGTAC GGGGGCAGCC GGGCTTGCCG AGGAGATCGT 200
TGGTCAAGGT TTCACTGCTA GCGCCGCTCG TATTTCAGGC GGGACAGCTG 250
AAGTACACCT GCAGCCTTCC GCGGCGATGA CGGAGGAAGC GCGTCGTGAT 300 ┘
CAGGAACGCT ACCGTCAGGA ACAGGAAAGC ATTGCCAAGC AGCAAGAGCG 350
CGAGATGGAG AAGAAAACCG AGGCCTACCG TAAAACCGCT GAGGCTGAAG 400
CTGAGAAGAT CCGCAAGGAG TTGGAGAAAC AGCACGCACG CGATGTCGAA 450
TTTCGCAAAG ACCTTATTGA AAGTACGATT GATCGTCAGA AACGTGAAGT 500 ┘

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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.

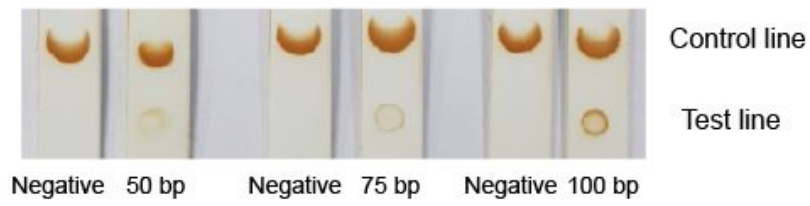


Figure S3. Detection of the short-length PCR amplicons on the proposed lateral flow assay (LFA) platform. Comparison of signal intensity of 5 nm of the amplified dsDNA by length: 50 bp, 75 bp, and 100 bp. Negative sample (PCR was performed without template gene for negative sample) were also tested.

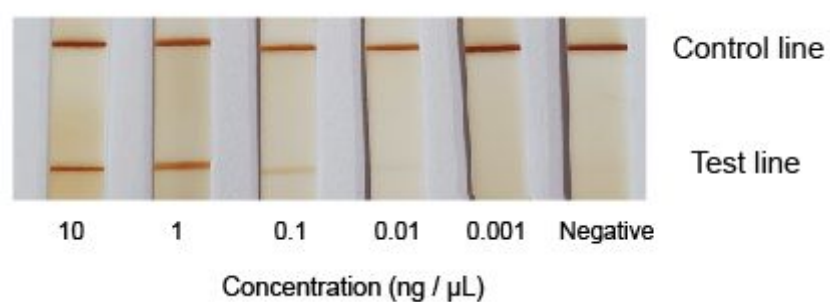


Figure S4. Detection of the PCR products of 2019-nCoV-N-Positive control gene. Diverse concentration of the PCR products: 0.001, 0.01, 0.1, 1, 10 ng / μ L, and negative sample (PCR was performed without 2019-nCoV-N-Positive control gene for negative sample) were tested.