Article

Visual and Ultrasensitive Detection of a Coronavirus Using a Gold Nanorod Probe under Dark Field

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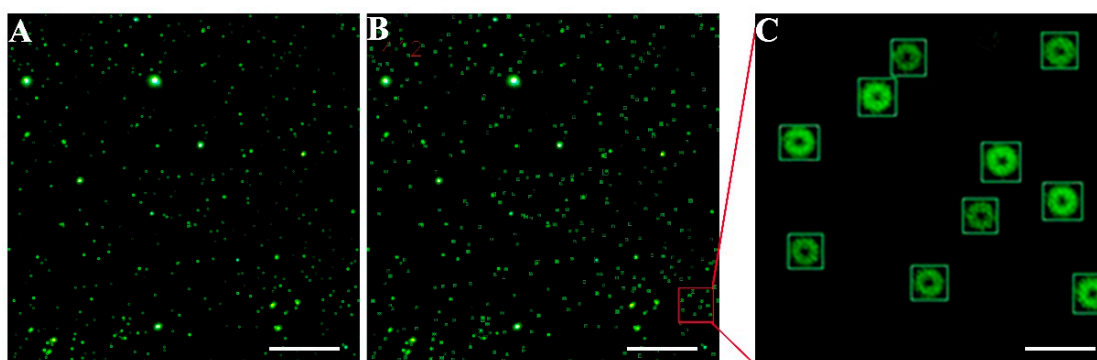[†] These authors contributed equally to this work.

Figure S1. Counting diagram for individual fields of view. (A) A DFM image of the captured PEDVs labeling with GNR probes. (B) The count of green halos formed from GNRs in DFM image by our **Counting software**. The **Counting software** automatically identifies and counts the green halos in dark field images and removes impurities that look similar but are different in color and size from the green halos formed by GNR. (C) The enlargement of the selected area in the red square of (B). Scale bar: 20 μm (A，B) and 2 μm (C).
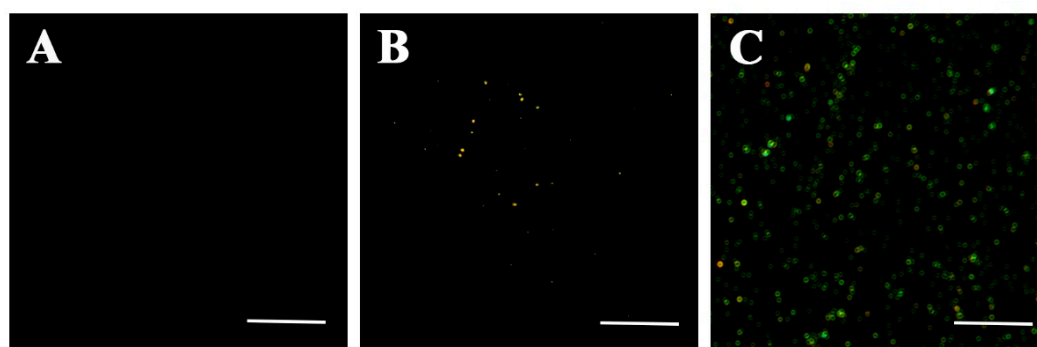

Figure S2. Characterization of GNRs on silicon wafer under the dark field. (A) Pure silicon wafer. (B) Ultrapure water control. (C) Silicon wafer with GNR particles diluted in ultrapure water. Scale bar: 10 μm.
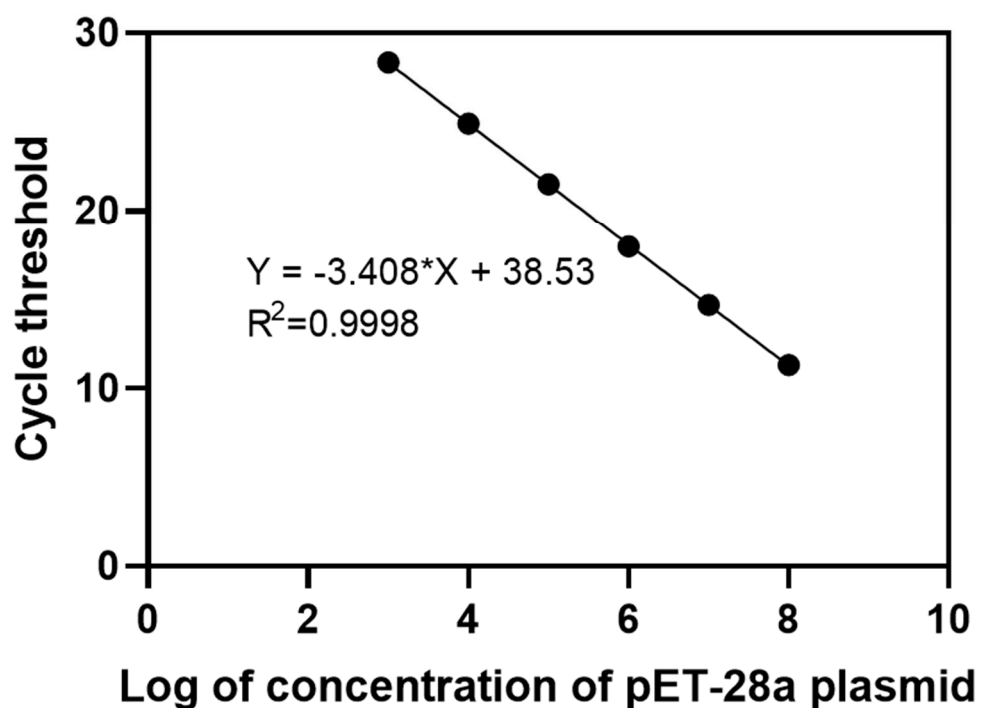

$$Y = -3.408*X + 38.53$$
$$R^2 = 0.9998$$

Figure S3. Standard quantification curve of PEDV qPCR assay to detect samples in different biological matrices.

Table S1. The primers for qPCR to amplify 108 bp fragment of PEDV CV777 strain genome (GenBank: AF353511.1).

The primers for qPCR:

Forward primer: 5'-TGGTGGCTGCTGTCAAGGA-3';

Reverse primer: 5'- TGCCGCTGTTGTCAGACTTTT -3'

The 108 bp fragment sequence:

TGGTGGCTGCTGTCAAGGATGCACTTAAATCTTTGGGTATTGGA-
GAAAATCCTGACAGGCATAAGCAACAGCAGAAGCCTAAGCAGGAAAAGTCTGACAACAGCGGCA