biosensors

MDPI

Supplementary Information

Cascade Amplified Plasmonics Molecular Biosensor for Sensitive Detection of Disease Biomarkers

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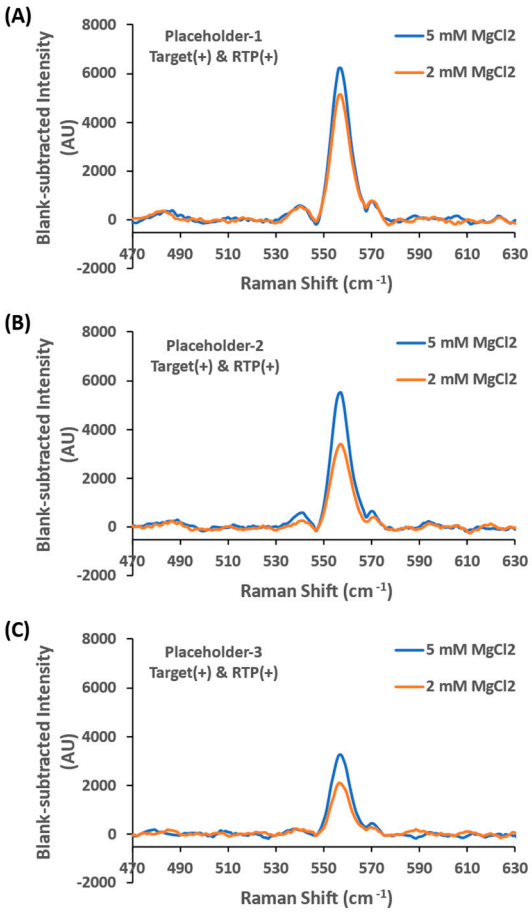

Figure S1. Blank-subtracted SERS spectra of the miR-21 iMS nanoprobes with (A) Placeholder-1, (B) Placeholder-2, and (C) Placeholder-3, in the presence 100 nM RTP strands and 1 nM targets (denoted as Target(+) & RTP(+)). The reactions were performed in 1xPBS buffer containing either 5 mM (blue spectrum) or 2 mM $MgCl_2$ (red spectrum) for 3 hours at room temperature. After incubation, 100 μL of the samples were transferred to a glass vial for SERS measurements. The spectra were taken using 4.8 mW laser power, 10 second exposure time and 5 accumulations.

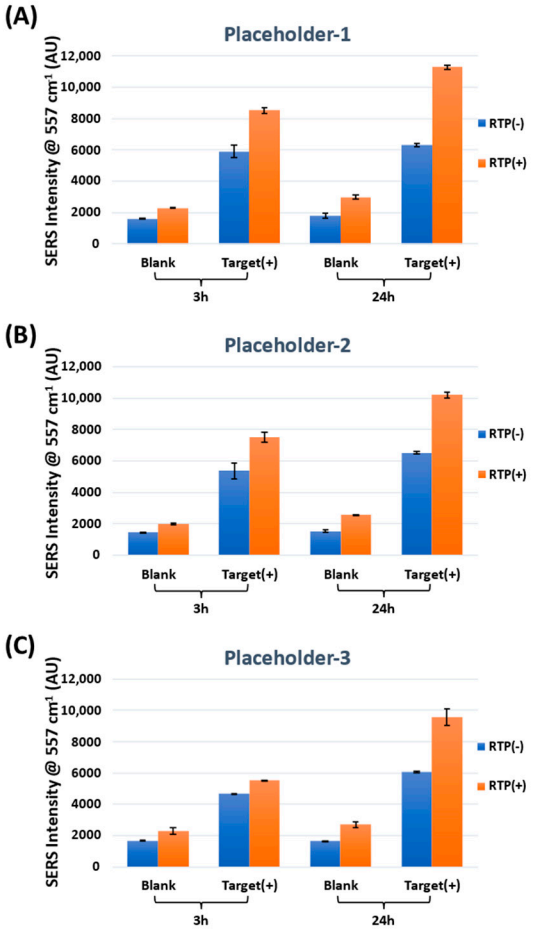

Figure S2. SERS peak-height intensity at 557 cm^{-1} of the miR-21 iMS nanoprobes with (A) Placeholder-1, (B) Placeholder-2, and (C) Placeholder-3, in the presence (denoted as RTP(+)) or absence (denoted as RTP(-)) of 100 nM RTP strands. The SERS signal was measured after 3- or 24-hour incubation at room temperature with 1 nM targets (denoted as Target(+)) or without targets (denoted as Blank). After incubation, 100 μL of the samples were transferred to a glass vial for SERS measurements. The spectra were taken using 4.8 mW laser power, 10 second exposure time and 5 accumulations.