

## Supporting Information for

### Detection of Adhesion Molecules on Inflamed Macrophages at Early-Stage Using SERS Probe Gold Nanorods

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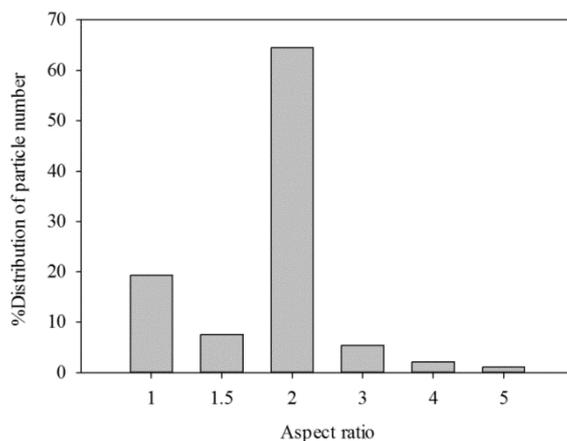
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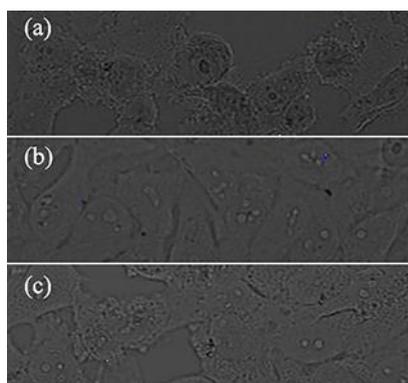
#### 1 The Distribution of GNR/4MBA@Anti-ICAM-1 Particles



**Fig. S1** The aspect ratio distribution of GNR/4MBA@Anti-ICAM-1 particles

## 2 SERS Measurement in HeLa Cells

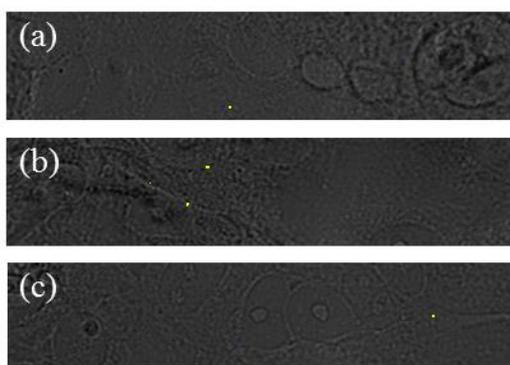
HeLa cells treated with LPS for 3 and 5 h. Non-treated HeLa cells were also prepared as a control cell. No distribution of SERS signals was detected because of non-specific target cells (Fig. S2).



**Fig. S2** HeLa cell images after SERS measurement under Raman spectroscopy; HeLa cells without treatment with LPS (a), HeLa cells treated with LPS for 3 h (b) and HeLa cells treated with LPS for 5 h (c). Cells were prepared and SERS measurement was performed following the experimental section No. 2.6 in the manuscript

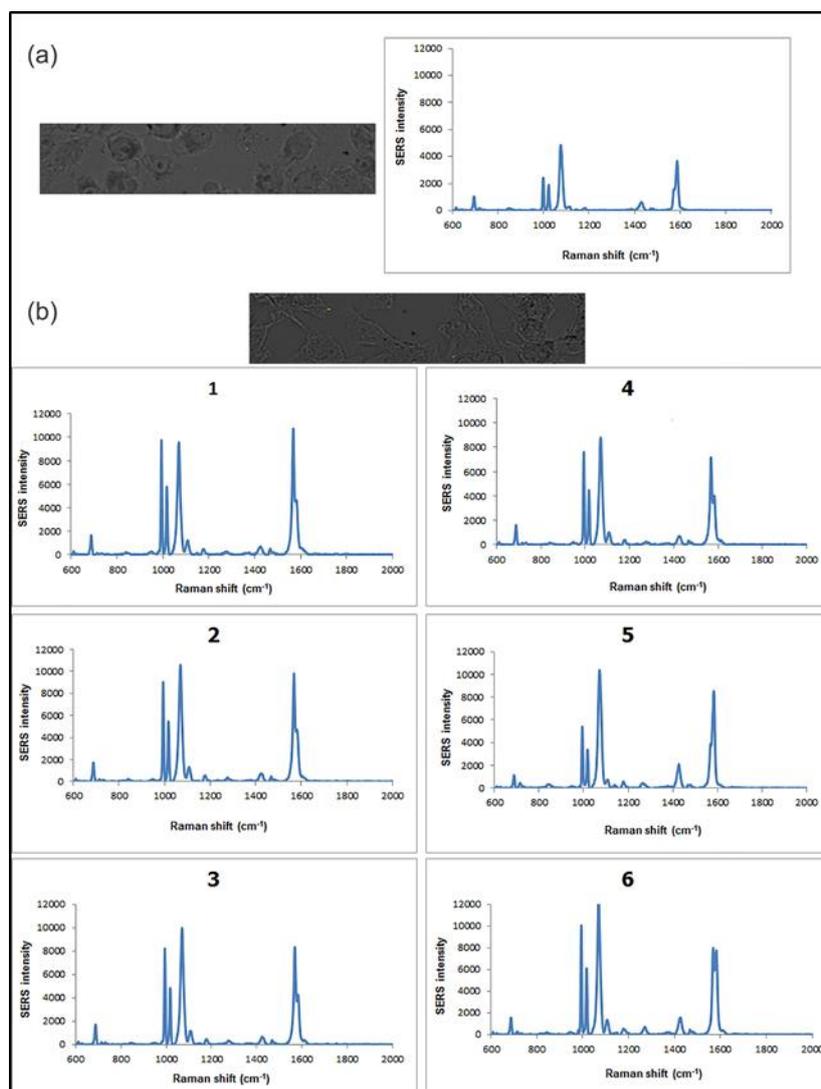
## 3 SERS Measurement in Vero Cells

Vero cells treated with LPS for 1 and 5 h and non-treated Vero cells were used as a control cell. Similar numbers of yellow spots were detected in Vero cells treated with LPS (for 1 and 5 h) and in non-treated Vero cells. These small yellow spots might occur from non-specific binding of particles. However, there is no difference of SERS distribution signals. This should be due to without the specific target (ICAM-1) molecules on the cell surface to bind with GNR/4MBA@Anti-ICAM-1 particles (Fig. S2).



**Fig. S3** Vero cell images after SERS measurement under Raman spectroscopy. Vero cells without treatment with LPS (a), Vero cells treated with LPS for 1 h (b) and 5 h (c). Cells were prepared and SERS measurement was performed following the experimental section No. 2.6 in the manuscript

#### 4 Examples of Single Spectra of RAW 264.7 Cells after SERS Measurement



**Fig. S4** Example of single spectra of RAW264.7 cells after SERS measurement. The distribution of SERS signal was detected in RAW 264.7 cells without LPS treatment (a) and RAW264.7 cells treated with LPS for 1 h (b). The number of single collected spectra of RAW264.7 cells treated with LPS for 1 h was 6. Each single spectrum of RAW264.7 cells treated with LPS provides a strong SERS signal than that of without LPS treatment