

Supporting Information

Label-free Imaging of Epidermal Growth Factor Receptor- induced Response in Single Living Cell

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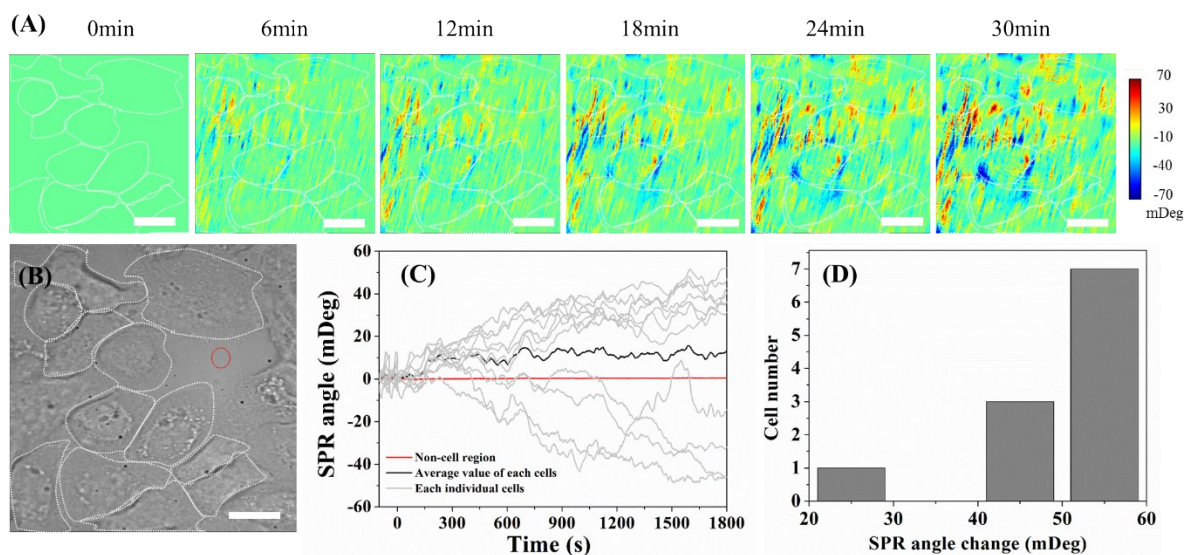


Fig. S1 Real-time SPR responses of A431 cell responding to ECF buffer treatment. (A) Differential SPR images of A431 cells during the course of 30 min treatment. The white dot lines represent the boundary of individual cells. (B) Bright field image of A431 cells. (C) SPR responses of single A431 cells (11 gray lines), the average response of all 11 cells (black line), and the bare gold region (red line, the red circle in Fig S1B). (D) The histogram of SPR responses of individual cells treated by ECF buffer. Scale bar: 20 μm .

This control experiment confirmed that the SPR signal baseline was stable under the experimental condition.

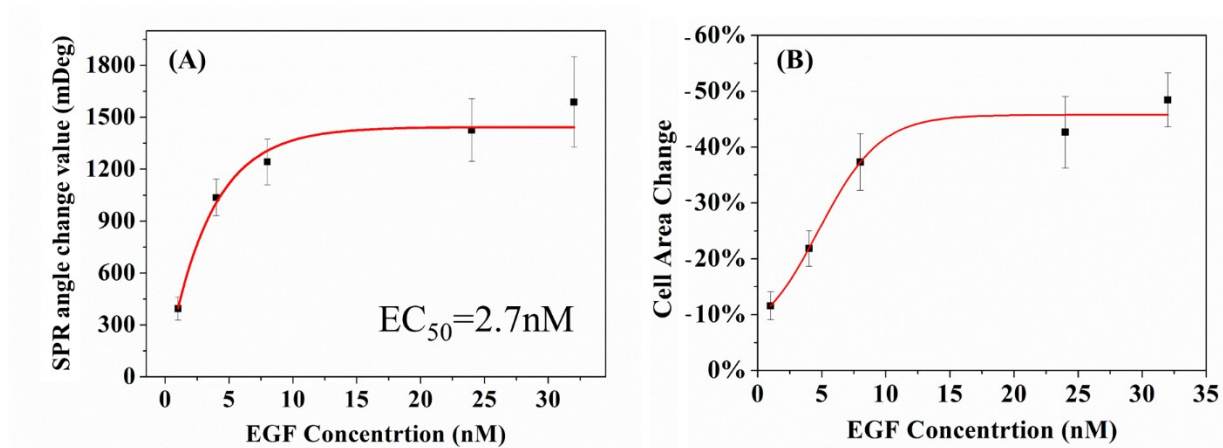


Fig. S2 Dose-dependent SPR responses. The red lines are the non-linear fitting results. (A) SPR responses in 30 min after EGF treatment and (B) the change of cell spreading area in 30 min after EGF treatment versus corresponding EGF concentrations. The error bar is the standard deviation of the responses of individual cells. The EC₅₀ calculated from (A) is 2.7 nM.

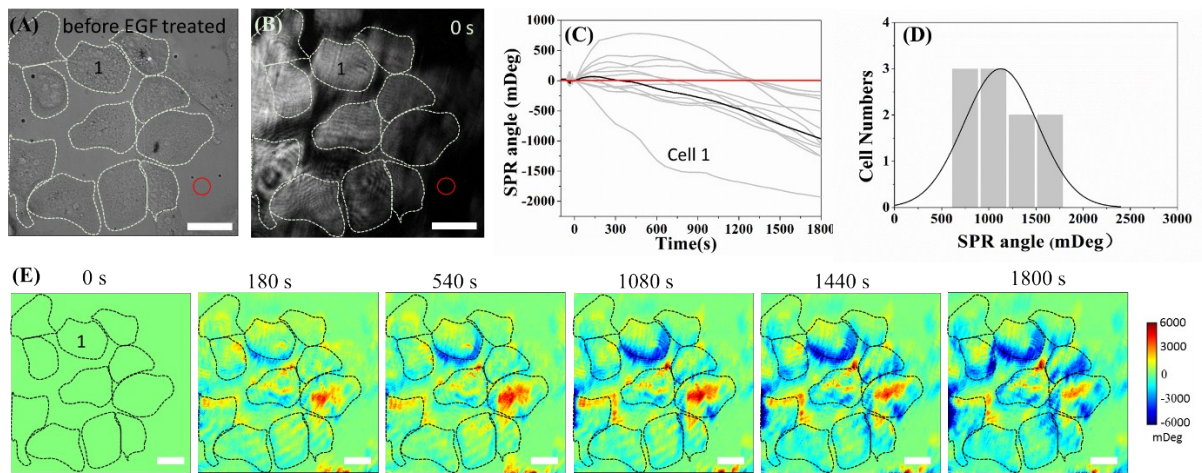


Fig. S3 Heterogeneous SPR response of A431 cells responding to 8 nM EGF in 30 min. (A) Bright field images of A431 cells before 8 nM EGF treatment and (B) SPR image of A431 cells at 0 min. The dot line outlines the boundary of single cells. The red circle represents the non-cell region. (C) Change of SPR angle of each A431 cells (grey lines). The black line is the average value of each cells. The red line is the SPR response of the non-cell region. (D) The histogram of the SPR responses. (E) Differential SPR images of A431 cells responding to 8 nM EGF. Scale bar: 20 μm .

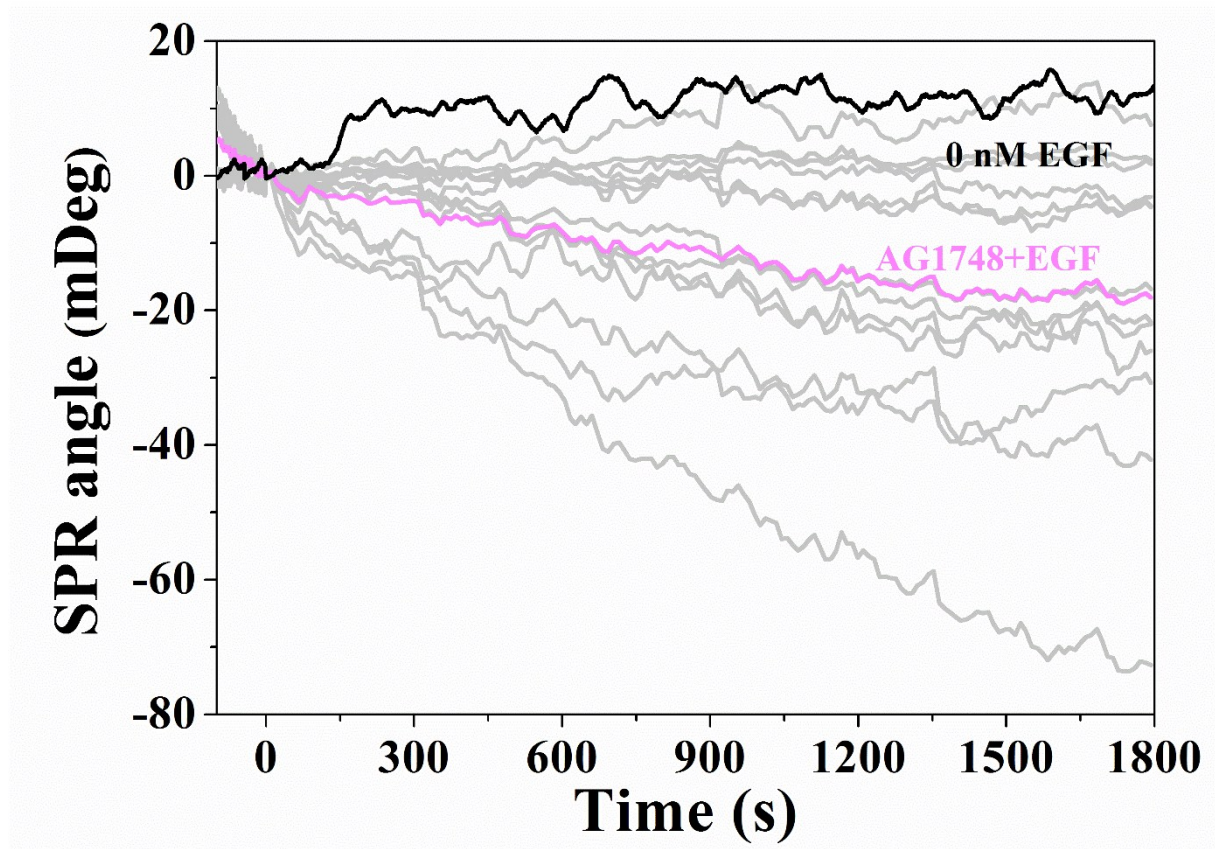


Fig. S4 The real-time average SPR response of A431 cells treated by 0 nM EGF (the black line) and 32 nM EGF pretreated by 25 mM AG1478 (the grey lines and the pink line). The grey lines are the real-time SPR response of each A431 cells treated 32 nM EGF pretreated by 25 mM AG1478. The pink line is their average value.

Movie S1 The SPR responses of A431 cells treated by 8 nM EGF.