

Fig.S.1. The microfluid system, the sensitivity and stability of SPR sensor used in this work. (A) The microfluid system is mounted on a rectangular prism with a controllable flow rate by a microfluidic pump. (B) The samples with 10^{-6} RIU can be discriminated by the SPR sensor. (C) The SPR sensor has a stability of 0.1RU in 6h. Because variation of 1RU is equivalent to 7.25×10^{-5} RIU according to Fig.A.1 (A), the sensor have a 7.25×10^{-6} RIU stability during 6h measurement process.

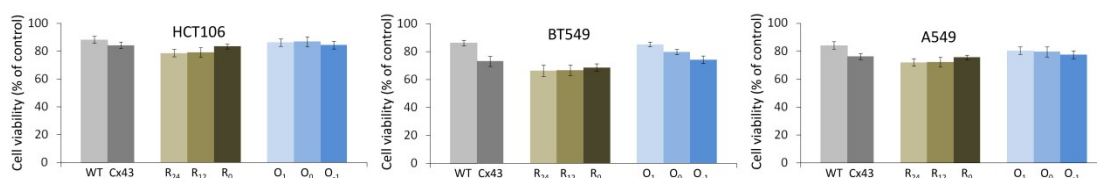


Fig.S.2. Effect of GJIC on chemosensitivity of HCT106, BT549 and A549 cell lines to cisplatin. Cell apoptosis levels treated with cisplatin for 24h were analyzed by MTT assay. The x and y axes show cell viability and cell types, respectively. “HCT106, BT549 and A549” above the figure indicate the names of cell lines. Below x axis, “WT” means wild type, “Cx43” means the cells transfected by Cx43, “R” means retinoid acid, “O” means oleamide, numbers mean the time which is defined in the caption of Fig.3. Control group is wild type cell lines with no cisplatin added which is not shown in the figure.

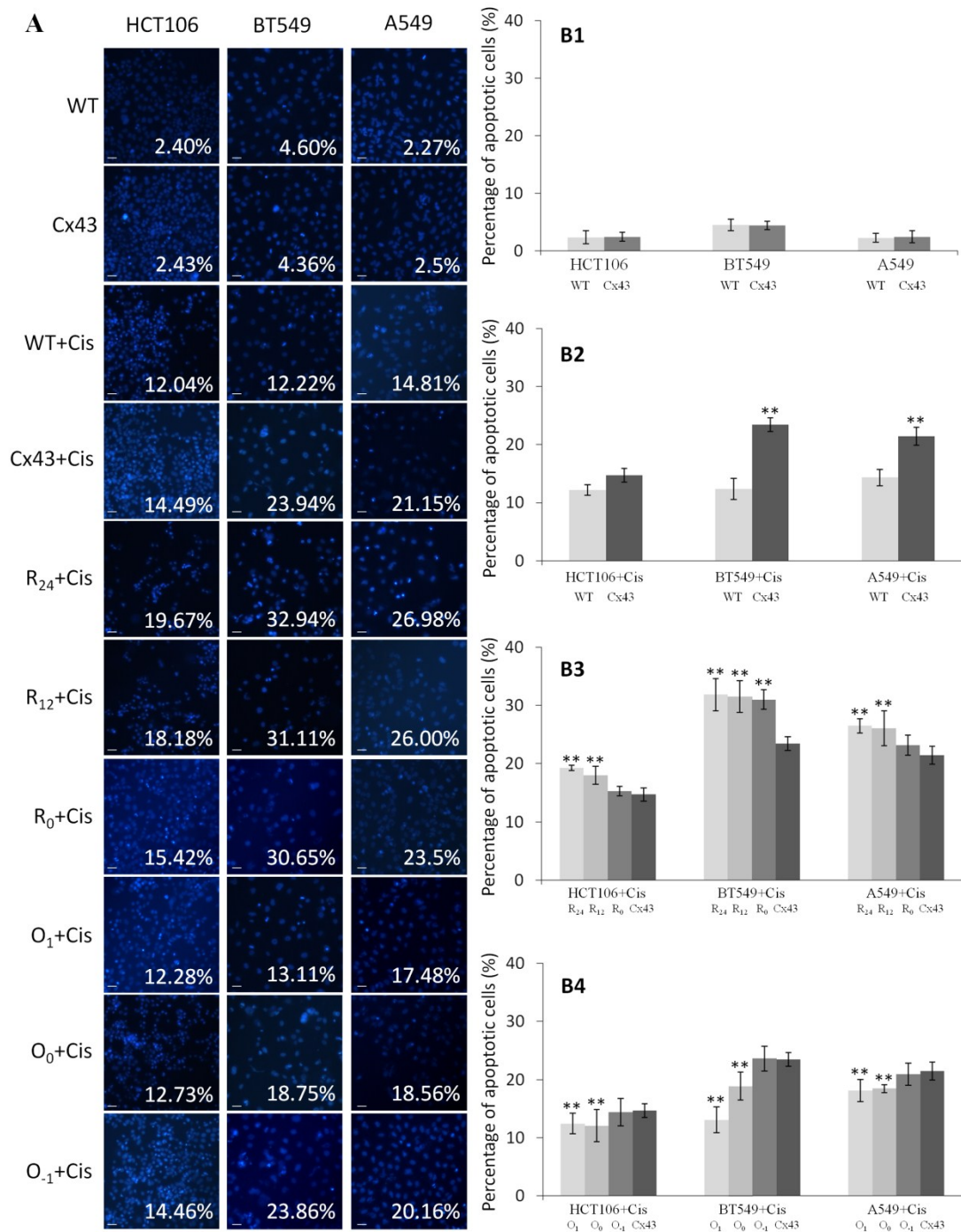
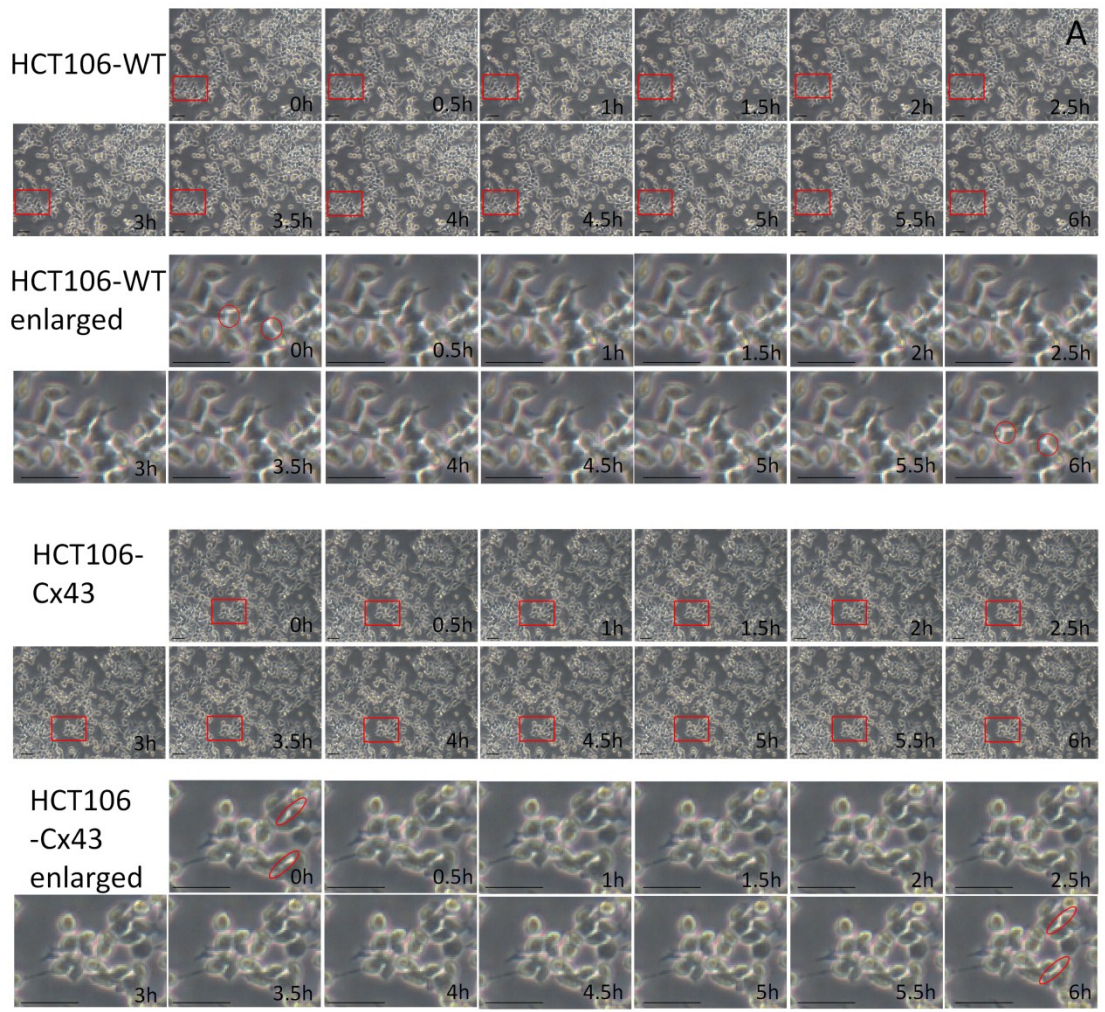
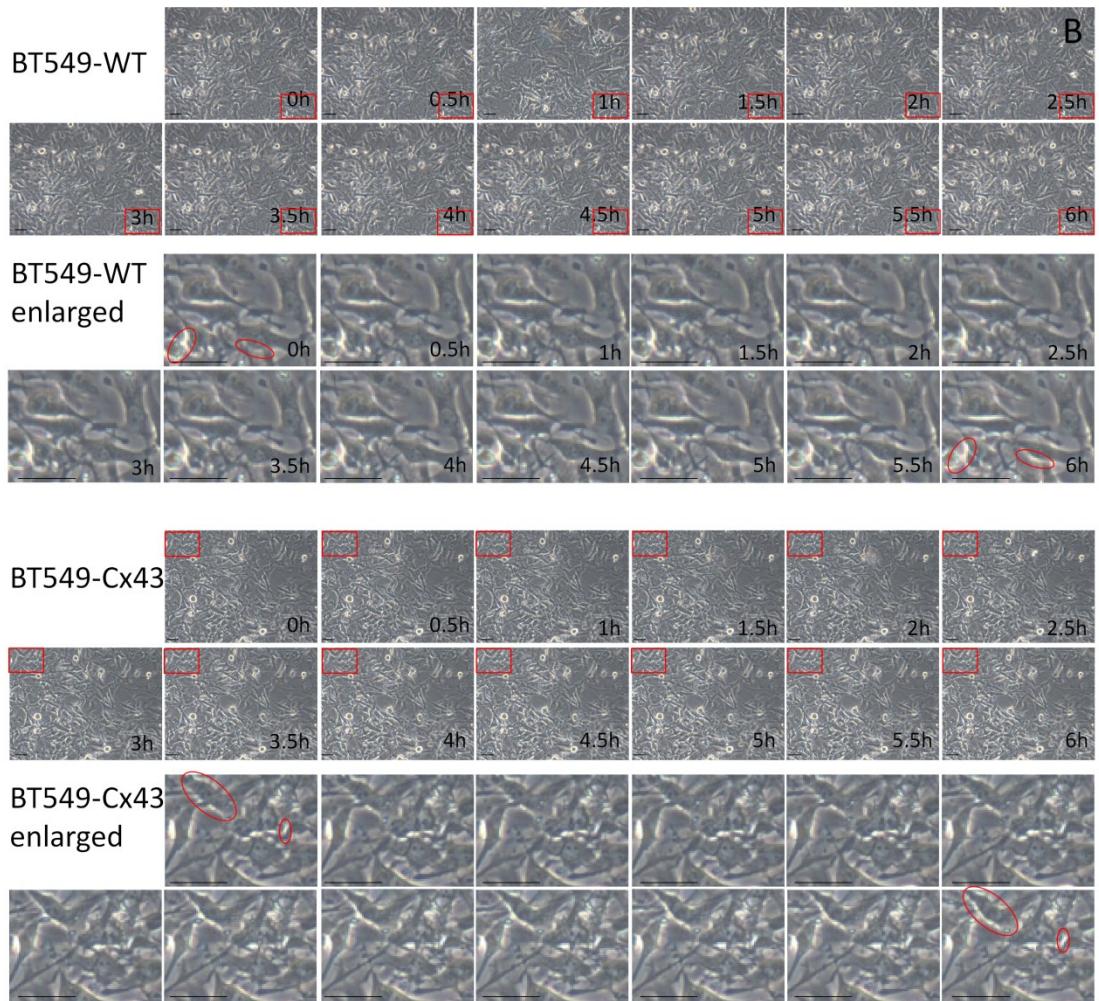


Fig.S.3. Effect of GJIC, retinoid acid and oleamide on the apoptosis of cisplatin treated cells. (A) Cell lines were treated with cisplatin for 24h followed by Hoechst 33342 staining to investigate the nuclear condensation. The percentages of positive staining are presented at lower right in each little picture. “HCT106, BT549 and A549” above the figure indicate the names of cell lines. On the left of the figure, “WT” means wild type, “Cx43” means the cells transfected by Cx43, “R” means retinoid acid, “O” means oleamide, numbers mean the time which is defined in the caption of Fig.3. “+Cis” means cisplatin treatment. “WT” and “Cx43” group with no cisplatin treatment were used as control. (B) The mean percentages with error bar of positive staining are presented as a histogram. B1: **P<0.05 vs the WT group; B2: **P<0.05 vs WT group; B3: **P<0.05 vs Cx43 group; B4: **P<0.05 vs Cx43 group. Control group is “WT” (B1,B2) or “Cx43” (B3,B4) cells with no cisplatin added which is not shown in the figure. The scale bars represent 10µm.





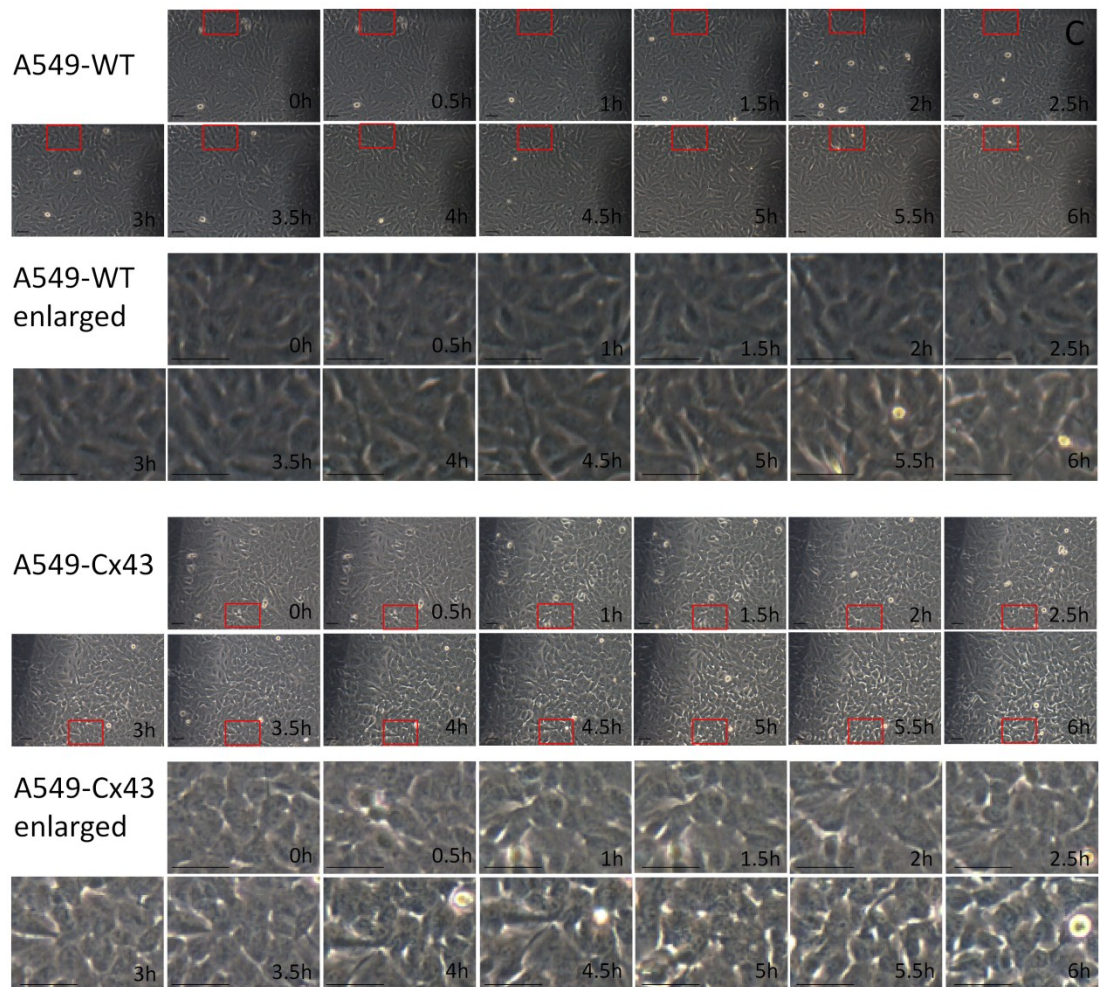


Fig.S.4. The morphologic changes of “WT” and “Cx43” cell types of the three cell lines: HCT106 (A), BT549 (B), A549 (C). Cells were photographed every half an hour during cisplatin treatment, and time points were indicated at lower right corner. For comparison, the red box area in images were enlarged which were shown below. The red circles were used to indicated the region where significant morphologic changes happens in HCT106 and BT549 cells. Obviously shrink of cells were occurred in HCT106 and BT549 cell lines, but it is hard to determine whether shrink phenomenon was occurred in A549 cell line because the position of A549 cells changed too fast to compare a single cell in different time. But on the other hand, significantly enlarged intercellular gap can be observed in all cell lines which can also reflect the effect of cisplatin cytotoxicity. The scale bars represent 10μm.