

**Figure S4:** IFN- $\alpha$  inhibits COX-2 expression through non-canonical JAK-STAT signaling. **(A)** T24 cells were treated with IFN- $\alpha$  (1 × 10<sup>4</sup> U/mL) for 2 hours and the expression levels of pJAK1, JAK1, pTyk2, Tyk2, pSTAT1, STAT1, pSTAT3, and STAT3 were estimated at specific time points. **(B)** T24 cells were treated by IFN $\alpha$  (1×10<sup>4</sup> U/ml) and/or JAK kinase inhibitor for 24 hours. The expression of COX-2 was analyzed by western blotting. The  $\beta$ -Tubulin was detected as loading control.