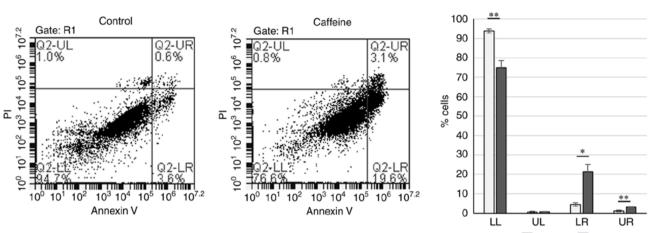
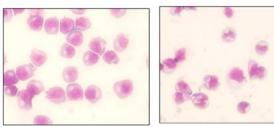
Figure S1. K562 cells were treated with caffeine and cultured for 24 h. Apoptosis induction was examined by Annexin V/PI staining. A bar graph is shown on the right. The data are presented as the mean of three results  $\pm$  standard deviation. \*P<0.05 and \*\*P<0.01, vs. the control.



Control Caffeine

Figure S2. K562 cells were treated with 1.2 mg/ml coffee extracts or 4 mM caffeine for 24 h and observed by Giemsa staining. Water: sterile water.



Control (water)



Control (DMSO)



Caffeine

Figure S3. Human PD-1/pcDNA3.1 or human PD-L1/pcDNA3.1 were transfected into K562 cells by electroporation. At 24 h following transfection, (A) the cell surface expression of PD-1 or PD-L1 was examined and (B) cell cycle analysis was performed. PD-1, programed death-1; PD-L1, programed death-ligand 1.

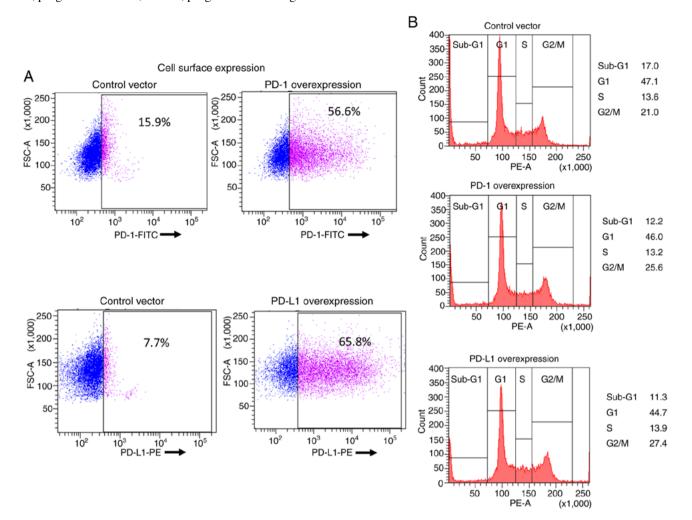


Figure S4. Immunostaining of PD-1 in Hep G2, SW480 and K562 cells. The relative value was graphed against the control. Bar graphs were shown on the right. The data are presented as the mean of three results  $\pm$  standard deviation. \*P<0.05 and \*\*P<0.01, vs. the control. PD-1, programed death-1; PD-L1, programed death-ligand 1.

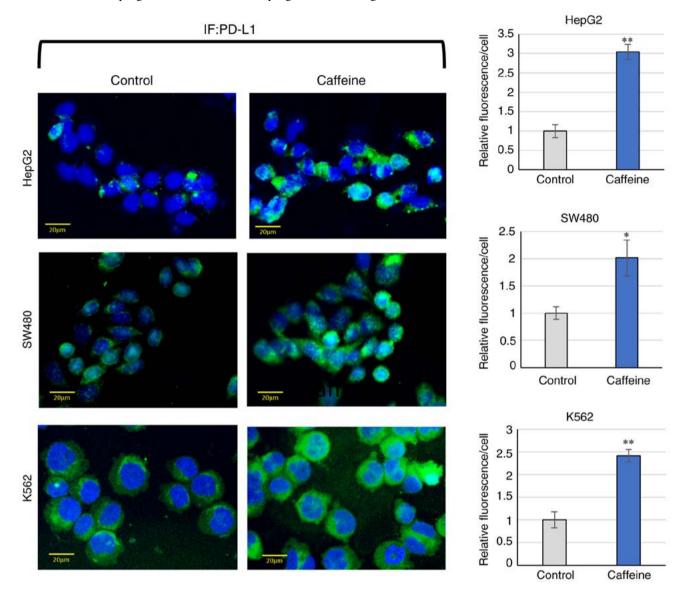


Figure S5. Immunostaining of PD-L1 in Hep G2, SW480 and K562 cells was performed. The length of yellow bar is 20  $\mu$ m. The relative value was graphed against the control and shown on the right. The data are presented as the mean of three results ± standard deviation. \*P<0.05, vs. the control. PD-1, programed death-1; PD-L1, programed death-ligand 1.

