**Supplementary Fig. S1. Interaction domains between CFLARL and PRMT5 and PRMT1. A** HEK293FT cells were transfected with the pcDNA3.1-FLAG-CFLARL plasmids and co-transfected with all sections of PRMT5 and the control plasmid. Then, the cells were harvested and prepared for the IP assay after 16 h. The cells were treated with 20 μmol/L MG132 for 4 h. The precipitated proteins were analyzed by western blotting. **B** HEK293FT cells were transfected with the pcDNA3.1-FLAG-CFLARL plasmids and co-transfected with the section of PRMT1 and the control plasmid. Then, the cells were harvested and prepared for the IP assay after 16 h. The cells were treated with 20 μmol/L MG132 for 4 h. The precipitated proteins were analyzed by western blotting. **C** HEK293FT cells were transfected with the pcDNA3.1-MYC-PRMT5 plasmids and co-transfected with all sections of CFLARL and the control plasmid. The cells were the harvested and prepared for the IP assay after 20 h, and the precipitated proteins were analyzed by western blotting. **D** HEK293FT cells were transfected with the pcDNA3.1-MYC-PRMT1 plasmids and co-transfected with all sections of CFLARL and the control plasmid. The cells were harvested, prepared for the IP assay after 16 h, and treated with 20 μmol/L MG132 for 4 h. The expression of the corresponding protein was calculated as described in (C).

**Supplementary Fig. S2. PRMT5 and PRMT1 modulated apoptosis in NSCLC cells. A** and **B** H460 cells were seeded in 6-well plates. PcDNA3.1-PRMT5 were transfected for 24h. Cells were treated with pemetrexed [5.0μM] for 48h. Cells were collected for Flow Cytometry analysis. **C** and **D** H460 cells were seeded in 6-well plates. PRMT5 siRNA were transfected for 48h. Cells were treated with pemetrexed [5.0μM] for 48h. Cells were collected for Flow Cytometry analysis. **E** and **F** A549 cells were seeded in 6-well plates. PRMT1 siRNA were transfected for 48h. Cells were treated with pemetrexed [5.0μM] for 48h. Cells were collected for Flow Cytometry analysis.