Supplemental Information

Long Non-coding RNA PVT1 Competitively Binds MicroRNA-424-5p to Regulate CARM1 in Radiosensitivity of Non-Small-Cell Lung Cancer

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Supplementary Figure 1. Relative expression of PVT1 in five different NSCLC cell lines, and A549 and H157 cells were selected for the following experiment.

Note: *, $P < 0.05$, compared with A549 and H157 cell lines. Data are means ± standard deviation from three independent experiments, $P$ calculated by one way ANOVA; PVT1, plasmacytoma variant translocation 1; NSCLC, non-small cell lung cancer.
Supplementary Figure 2. The siRNA-1 was selected for the following experiments

Note: *, $P < 0.05$, compared with the NC group; Data are means ± standard deviation from three independent experiments, $P$ calculated by one way ANOVA; PVT1, plasmacytoma variant translocation 1.
Supplementary Figure 3. PVT1 is verified as the target gene of miR-424-5p

Note: A, combined site of miR-424-5p and PVT1 3’ UTR; B, dual luciferase reporter assay of gene activity; *, P < 0.05, compared with the NC group; Data are means ± standard deviation from three independent experiments, P calculated by one way ANOVA; miR-424-5p, mircoRNA-424-5p; PVT1, plasmacytoma variant translocation 1; 3’ UTR, 3’ Untranslated Regions.
Supplementary Figure 4. The interaction of PVT1 and CARM1

Note: *, $P < 0.05$, compared with the IgG NC group. Data are means ± standard deviation from three independent experiments, $P$ calculated by one way ANOVA; PVT1, plasmacytoma variant translocation 1; CARM1, co-activator associated arginine methyltransferase 1.
Supplementary Figure 5. Silencing of PVT1 or overexpression of miR-424-5p can increase the sensitivity of cell radiation to radiation.

Note: *, \( P < 0.05 \), compared with the blank and NC groups; #, \( P < 0.05 \), compared with the siRNA-PVT1 group; Data are means ± standard deviation from three independent experiments, \( P \) calculated repeated measurement of analysis of variance; PVT1, plasmacytoma variant translocation 1; NC, negative control.
Supplementary Figure 6. siRNA-PVT1 or overexpressed miR-424-5p suppressed expression of CARM1 and some other factors related to tumor progression and cell apoptosis.

Note: A & D, miR-424-5p expression and mRNA expression of PVT1, CARM1, MMP-2, MMP-9, Bcl-2 and Bax in cells; B & E, Western blot analysis; C & F, protein expression of PVT1, CARM1, MMP-2, MMP-9, Bax and Bcl-2 in cells; *, *P < 0.05, compared with the blank and NC groups; #, *P < 0.05, compared with the siRNA-PVT1 group; Data are means ± standard deviation from three independent experiments, *P calculated by one way ANOVA; miR-424-5p, mircoRNA-424-5p; CARM1, co-activator associated arginine methyltransferase 1; MMP-2, matrix metallopeptidase-2; MMP-9, matrix metallopeptidase; Bcl-2, B cell lymphoma 2; Bax, Bcl2-associated X protein; PVT1, plasmacytoma variant translocation 1; NC, negative control.
Supplementary Figure 7. NSCLC cell proliferation was inhibited after transfection of overexpressed miR-424-5p

Note: *, $P < 0.05$, compared with the blank and NC groups; #, $P < 0.05$, compared with the siRNA-PVT1 group; Data are means ± standard deviation from three independent experiments, $P$ calculated repeated measurement of analysis of variance; PVT1, plasmacytoma variant translocation 1; miR-424-5p, mircoRNA-424-5p.
Supplementary Figure 8. NSCLC cell migration and invasion suppressed by siRNA-PVT1 or overexpressed miR-424-5p

Note: A, cell migration and invasion of A549 cell lines; B, cell migration and invasion of H157 cell lines; *, $P < 0.05$, compared with the blank and NC groups; #, $P < 0.05$, compared with the siRNA-PVT1 group; Data are means ± standard deviation from three independent experiments, $P$ calculated by one way ANOVA; PVT1, plasmacytoma variant translocation 1; miR-424-5p, mircoRNA-424-5p.
Supplementary Figure 9. Changes of cell cycle distribution and apoptosis after transfection in each group

Note: A, cell cycle of A549 cell line; B, apoptosis of A549 cell line; C, cell cycle of H157 cell line; D, apoptosis of H157 cell line; *, $P < 0.05$, compared with the blank and NC groups; #, $P < 0.05$, compared with the siRNA-PVT1 group. Data are means ± standard deviation from three independent experiments, $P$ (cell apoptosis) calculated by one way ANOVA; $P$ (cell cycle) calculated repeated measurement of analysis of variance.
Supplementary Figure 10. Tumor growth was inhibited in A549 cell lines by siRNA-PVT1 or overexpressed miR-424-5p

Note: A, tumor growth graph; B, tumor size at the 20th day after radiation; C, tumor weight at the 20th day after radiation; *, P < 0.05, compared with the blank and NC groups; #, P < 0.05, compared with the siRNA-PVT1 group; Data are means ± standard deviation from three independent experiments, P (tumor weight) calculated by one way ANOVA; P (tumor volume) calculated repeated measurement of analysis of variance; n = 6 per group. PVT1, plasmacytoma variant translocation 1; miR-424-5p, mircoRNA-424-5p