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Effects of Long Non-coding Ribonucleic Acid Plasmacytoma Variant Translocation 1 Regulating Octamer Binding Transcription Factor 4 Expression on Hepatocellular Carcinoma Cells

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ABSTRACT The researchers aimed to evaluate the effects of long non-coding ribonucleic acid plasmacytoma variant translocation 1 (lncRNA PVT1) regulating octamer binding transcription factor 4 (OCT4) expression on hepatocellular carcinoma (HCC) cells. It was discovered that in contrast to the blank group, si-PVT1 group had lower PVT1 and OCT4 expressions, number of invading cells and wound healing rate, and higher radiosensitivity ($P<0.05$). OCT4 served as a gene targeted by lncRNA PVT1. The PVT1 group exhibited declined luciferase activity compared with the NC group after transfection with wild-type OCT4 ($P<0.05$). In comparison with those of the sh-NC group, the number of invading cells and wound healing rate dropped in the sh-OCT4 group ($P<0.05$). At the same radiation dose, a lower survival fraction than that in the sh-NC group was observed in the sh-OCT4 group ($P<0.05$). Silencing lncRNA PVT1 significantly suppresses HCC cell invasion as well as migration and elevates their radiosensitivity, probably by down-regulating OCT4 expression.