HUMAN LIVER CANCER CELL LINE FOR STUDY AN ALTERNATIVE TUMOR VASCULARIZATION – VASCULOGENIC MIMICRY

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Recent evidences showed that cancer cells can form vascular channels without endothelial cell lining, which termed "vasculogenic mimicry" (VM). The VM functions similar to angiogenesis-derived blood vessels, however it resists to several angiogenesis inhibitors. Liver cancer is the top leading cause of death in Thailand. VM has been observed in human liver cancer tissues however there is still lack of cellular model for the study of VM in liver cancer. Here we used Matrigel-tube formation assay to evaluate *in vitro* VM capacity of human liver cancer cell lines was found to vary in differentiation status. Invasive phenotype of the cell lines was determined from cell migration and production of matrix metalloproteinase enzymes using Transwell assay and gelatin zymography, respectively. Expression pattern of endothelial-specific marker and liver-specific marker genes was determined by real-time RT-PCR. Among tested liver cancer cell lines, the VM formation was found only in the highly invasive cell line which did not express angiogenesis-related endothelial-specific genes, e.g. CD31 and VE-cadherin. The results suggest that the VM capacity of liver cancer cells is associated with invasive phenotype, and the mechanism of VM formation differs from that used by endothelial cells.

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