Oral Sessions

Biological significance of CYLD expression in malignant characteristics of glioblastoma multiforme.

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Introduction: Cylindromatosis (CYLD) regulates various cell signaling pathways by acting as a deubiquitinating enzyme. Although it was shown that loss of CYLD expression was associated with poor prognosis in glioblastoma multiforme (GBM), the biological roles of CYLD in GBM remain unknown. Here, we elucidated the biological significance of CYLD in the malignant characteristics of GBM.

Methods: To assess the biological significance of CYLD in GBM cell line (U251MG), we performed CYLD knocked-down by CYLD-specific siRNA and CYLD overexpression by wild-type CYLD plasmid. Next, we evaluated cell migration by cell migration assay, cell morphological change by endothelial tube formation assay, and cancer stem-like characters by sphere formation assay.

Results: In U251MG, CYLD knocked-down significantly promoted cell migration, while CYLD overexpression suppressed it. CYLD knocked-down also induced cell morphological change like vascular mimicry (VM), whereas CYLD overexpression inhibited it. Moreover, CYLD knocked-down promoted cancer stem-like characters, while CYLD overexpression suppressed it.

Conclusion: Loss of CYLD expression may be associated with the malignant characters, such as, invasion, VM, and cancer stem-like characters of GBM.