論 文 要 旨

Tumour-suppressive *miRNA-26a-5p* and *miR-26b-5p* inhibit cell aggressiveness by regulating *PLOD2* in bladder cancer

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Background:
Previous studies have revealed that *miR-26a-5p* and *miR-26b-5p* act as tumour suppressors in various types of cancer tissues. Here, we aimed to investigate the functional roles of these miRNAs and to identify their regulatory targets in bladder cancer (BC).

Methods:
We performed functional assays in BC cells using transfection of mature microRNAs (miRNAs). In silico analyses and luciferase reporter analyses were applied to identify target genes of these miRNAs. The overall survival of patients with BC was evaluated by the Kaplan-Meier method.

Results:
miR-26a-5p and *miR-26b-5p* were significantly downregulated in BC tissues. Restoration of these miRNAs inhibited cell migration and invasion in BC. The gene encoding *procollagen-lysine, 2-oxoglutarate 5-dioxygenase 2* (*PLOD2*), a collagen crosslinking enzyme, was directly regulated by *miR-26a-5p* and *miR-26b-5p*. Kaplan-Meier analysis revealed that patients with high *PLOD2* expression had significantly shorter OS than those with low *PLOD2* expression (P = 0.0153).

Conclusions:
PLOD2, which is associated with the stiffness of the extracellular matrix, was directly regulated by *miR-26a-5p* and *miR-26b-5p* and may be a good prognostic marker in patients with BC.