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Epigenetic silencing of miR-1271 enhances MEK1 and TEAD4 expression in gastric cancer

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Epigenetic dysregulation is a major driver of tumorigenesis. To identify tumor-suppressive microRNAs repressed by DNA methylation in gastric cancer (GC), we analyzed the genome-wide DNA methylation and microRNA expression profiles. Among the set of microRNAs screened, miR-1271 was identified as a microRNA repressed by DNA methylation in GC. Forced miR-1271 expression substantially suppressed the growth, migration, and invasion of GC cells. To identify candidate target genes and signaling pathways regulated by miR-1271, we performed RNA sequencing. Among the genes down-regulated by miR-1271, MAP2K1 (MEK1) and TEAD4 were significantly repressed by miR-1271. These findings uncovered MEK1 and TEAD4 as novel miR-1271 targets and suggest that the epigenetic silencing of miR-1271 is crucial for GC development.

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