



## MicroRNA-199a-3p is downregulated in gastric carcinomas and modulates cell proliferation

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**ABSTRACT.** MicroRNAs (miRNAs) are small non-coding RNAs that regulate the translation of targeted mRNAs. An increasing amount of evidence indicates that miRNAs play important role in cancer pathogenesis, apoptosis, proliferation, and differentiation as oncogenes or tumor suppressors. Recently, miRNA-199a has been shown to be involved in many human cancers, although the role of miRNA-199a-3p in gastric cancer has not yet been evaluated. In the present study, the expression of miRNA-199a-3p was found to be significantly downregulated in human gastric cancer tissues and cells. miRNA-199a-3p induced anti-proliferation effects on human gastric cancer cells. Furthermore, using quantitative RT-PCR (real-time polymerase chain reaction) and luciferase reporter assays, *mTOR* was identified as a direct target gene of miRNA-199a-3p that is downregulated by it. In conclusion, our findings suggest that miRNA-199a-3p is associated with human gastric cancer through its ability to decrease cancer cell proliferation and target the mTOR signaling pathway, and, therefore, may provide a novel

therapeutic target for the treatment of human gastric cancer.

**Key words:** miRNA-199a-3p; Gastric cancer; mTOR; Anti-proliferation