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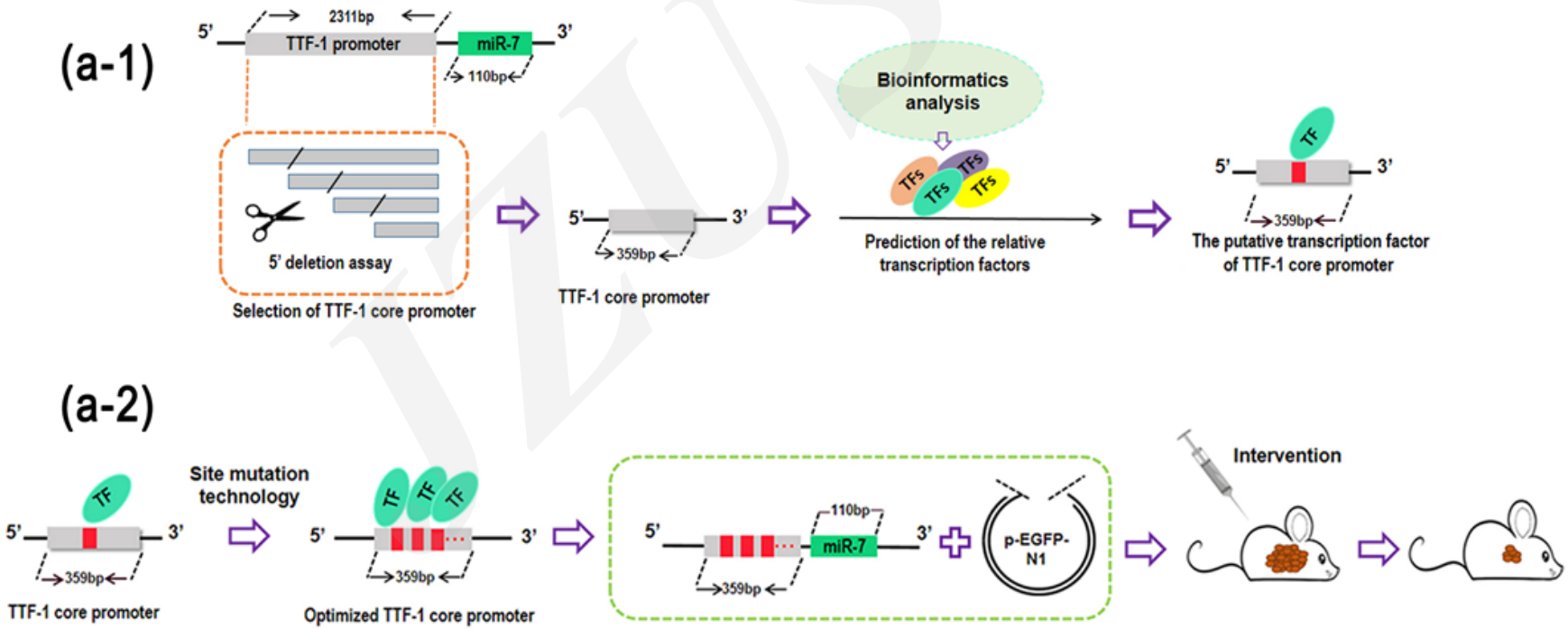
Optimized thyroid transcription factor-1 core promoter-driven microRNA-7 expression effectively inhibits the growth of human non-small-cell lung cancer cells

Key words: Lung cancer; TTF-1; promoter; miR-7; NF-1

Research Summary

This article mainly describes the process of screening and optimization of the TTF-1 core promoter(termed as *opt*TTF-1 promoter), and explores its effect in gene therapy against clinical lung cancer. As expected, the *opt*TTF-1 promoter could more effectively operate miR-7 to influence the growth of human NSCLC cells *in vitro and in vivo*.



Innovation points

●**The reasonable optimization of TTF-1 promoter could more effectively drive miR-7 expression and abrogate the growth of human NSCLC cells *in vivo* with an inhibition rate increased to 126% (inhibition rate 34% vs 77%).**

●**MiR-7, as a tumor suppressor gene, plays an important role in the occurrence and development of lung cancer by regulating multiple targets and signaling pathways.**

●**NF-1, a critical transcription factor binding to the TTF-1 core promoter, has a new value in gene therapy against cancer.**

●**The *opt*TTF-1 promoter-driven miR-7 expression exhibits an ideal targeting efficacy and safety.**

Figure 4