## RETRACTION

## Slug enhances invasion ability of pancreatic cancer cells through upregulation of matrix metalloproteinase-9 and actin cytoskeleton remodeling

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The authors of this article have requested its retraction from *Laboratory Investigation* because of their inability to reproduce key experiments:

Zhang K, Chen D, Jiao X, Zhang S, Liu X, Cao J, Wu L, Wang D. Slug enhances invasion ability of pancreatic cancer cells through upregulation of matrix metalloproteinase-9 and actin cytoskeleton remodeling. Lab Invest 2011;91:426–438.

This paper reports that Slug transfection does not affect E-cadherin expression. However, upon repeating the experiment, we found Slug transfection significantly reduces the E-cadherin expression. Additionally, MMP-2 was upregulated in new experiments.

The paper also reveals that intracellular F-actin and MMP-9 levels are increased and relocated to the tip of the extending pseudopodia from the perinuclear pool in Slug-transfected PANC-1 cells. However, upon repeating the experiment, it appeared that only F-actin, not MMP-9, was relocated to the tip of the extending pseudopodia. Therefore, the cellular localization of the MMP-2 cells needs further investigation.

Furthermore, there were several minor errors in the paper:

- 1. The primer sequence for E-cadherin should be 5'-GGAA GTCAGTTCAGACTCCAGCC-3' and 5'-AGGCCTTTTGA CTGTAATCACACC-3'; not 5'-TTCAGTTCCGAGGTCTA CAC-30; antisense: 30-GTCTCTGTGGTGATGCCGGT-5, as was reported.
- 2. The wrong reference was cited for the BB94 treatment. The correct concentration was  $0.25 \,\mu$ mol/l, not  $0.1 \,\mu$ mol/l, as was written.
- 3. Female C57BL/6 mice were at 4–6 weeks, not 6–8 weeks of age.
- 4. All statistical analyses were performed using SPSS 7.0 software, not SPSS 13.

The authors regret the impact that these inconsistencies and errors may have had on other researchers.