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RECEIVED 19 April 2023

ACCEPTED 02 May 2023

PUBLISHED 22 May 2023

## CITATION

Zhang W, Mao S, Shi D, Zhang J, Zhang Z, Guo Y, Wu Y, Wang R, Wang L, Huang Y and Yao X (2023) Corrigendum: MicroRNA-153 decreases tryptophan catabolism and inhibits angiogenesis in bladder cancer by targeting indoleamine 2,3-dioxygenase 1. *Front. Oncol.* 13:1208728. doi: 10.3389/fonc.2023.1208728

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# Corrigendum: MicroRNA-153 decreases tryptophan catabolism and inhibits angiogenesis in bladder cancer by targeting indoleamine 2,3-dioxygenase 1

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## KEYWORDS

bladder cancer, miR-153, tryptophan catabolism, angiogenesis, indoleamine 2, 3-dioxygenase 1

## A corrigendum on

[MicroRNA-153 decreases tryptophan catabolism and inhibits angiogenesis in bladder cancer by targeting indoleamine 2,3-dioxygenase 1](#)

by Zhang W, Mao S, Shi D, Zhang J, Zhang Z, Guo Y, Wu Y, Wang R, Wang L, Huang Y and Yao X (2019). *Front. Oncol.* 9:619. doi: 10.3389/fonc.2019.00619.

In the published article, there was a there was an error in [Figures 2, 5](#) as published. We mistakenly used the same image of clone formation in [Figure 2E](#) (T24-miR-153) and [Figure 5B](#) (UMUC3-Si-IDO1) due to layer overlays. Furthermore, in the transwell section of [Figure 2](#), we found a minor error in the UMUC3-miR-153(G) and T24-miR-NC(H) due to incorrect use of images. We repeated these experiments and corrected the results. The corrected [Figures 2, 5](#) appear below.

There was also an error in [Figure 7](#). We missed labeling the names of T24 and UMUC3 cell lines in panels C and D. The corrected [Figure 7](#) appears below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

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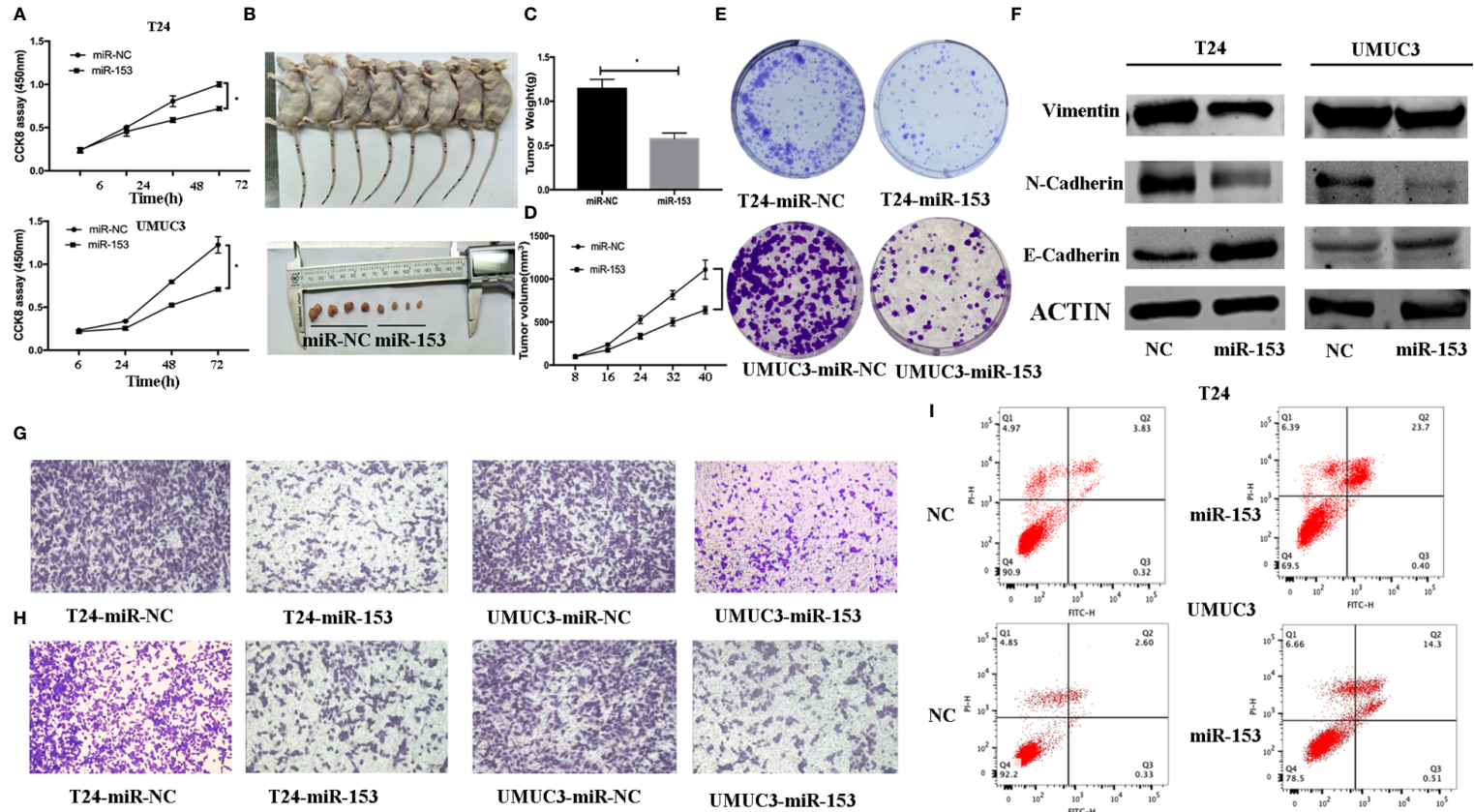
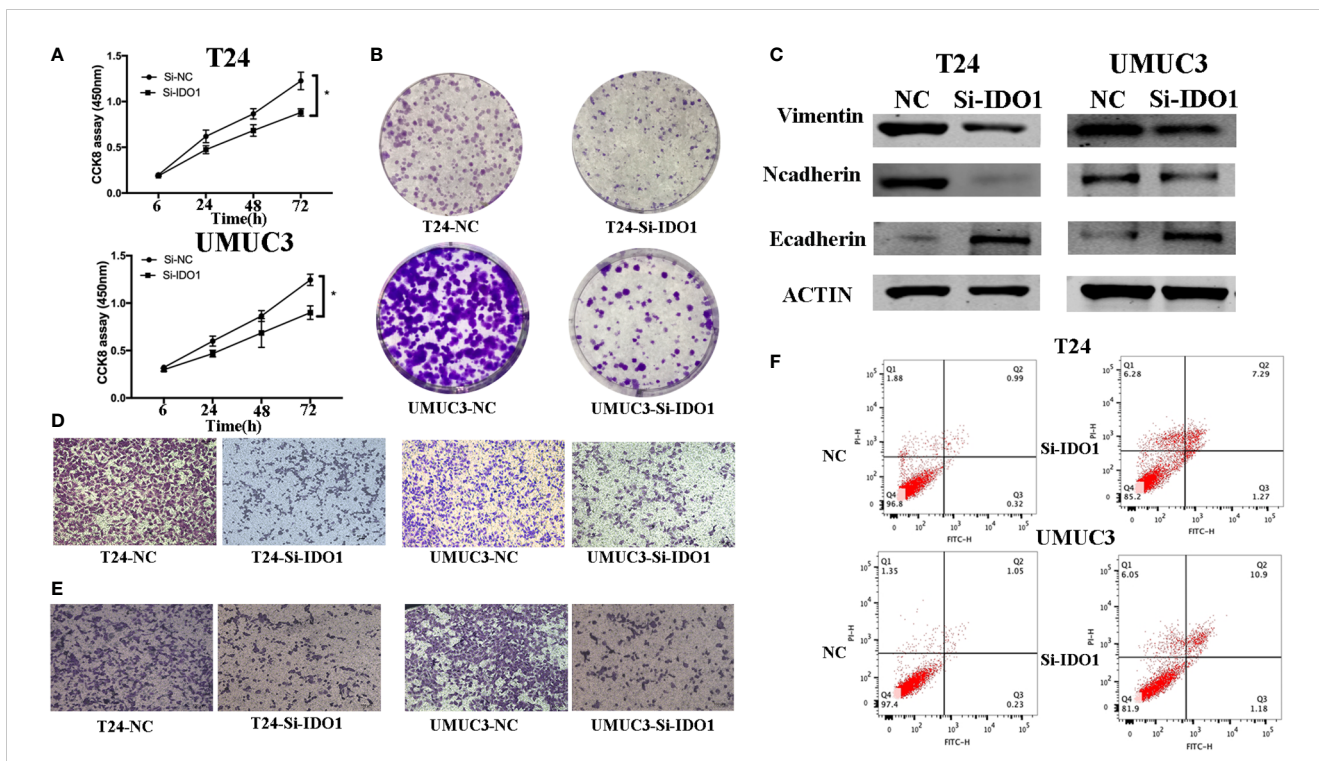
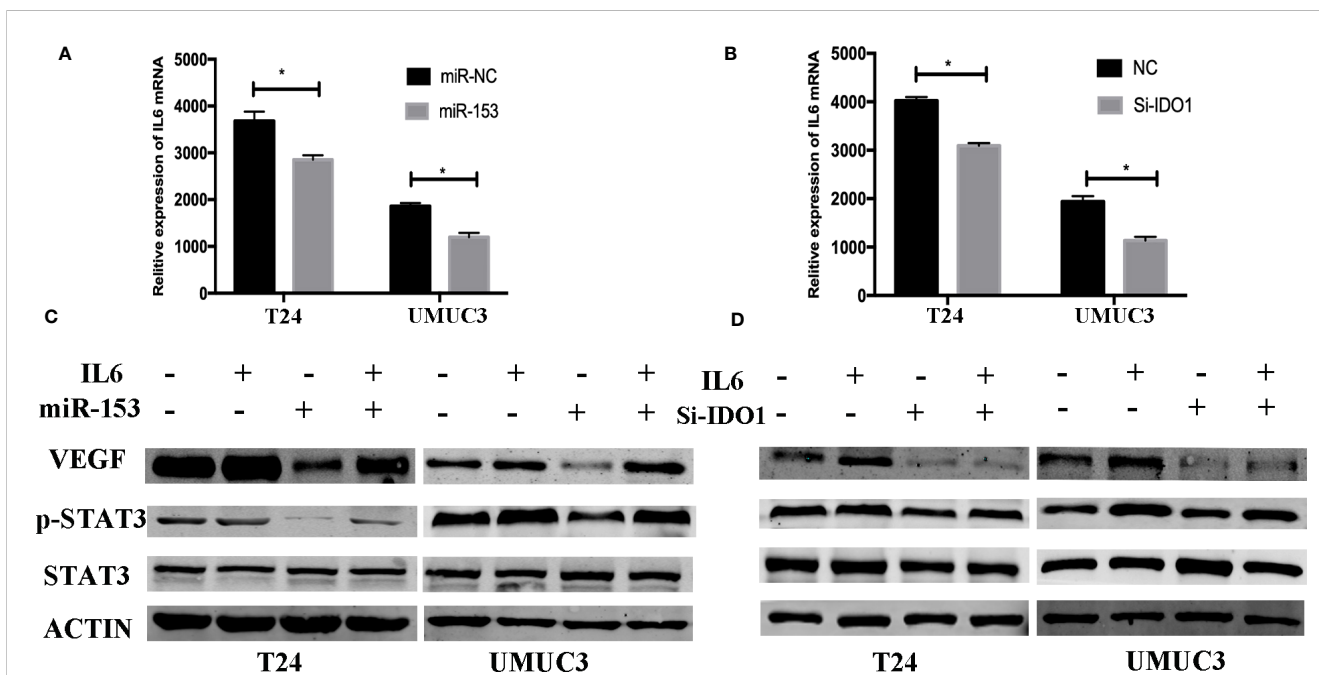


FIGURE 2

miR-153 inhibits bladder cancer growth *in vitro* and *in vivo* by promoting tumor cell apoptosis, migration, invasion, and EMT. (A) Cell viability CCK-8 assay. T24 and UMUC3 cells were transfected with miR-153 mimics or negative control and then subjected to the CCK-8 assay. (B) Nude mouse xenograft assay. Stably miR-153 expressing mimics or negative control bladder cancer cells were subcutaneously injected into nude mice and monitored for 40 days for tumor cell xenograft formation and growth. (C) Tumor cell xenograft growth curves. (D) Tumor cell xenograft weight. (E) Colony formation assay. T24 and UMUC3 cells were transfected with miR-153 mimics or negative control and then subjected to tumor cell colony formation assay (x 200). (F) Western blot. Expression levels of EMT-associated markers in miR-153 mimics or negative control transfected T24 and UMUC3 cells were evaluated by using Western blot analysis. (G) Transwell tumor cell migration assay. (H) Transwell tumor cell invasion assay. (I) Flow cytometric Annexin V-PI double staining assay. \* $P < 0.05$ .



**FIGURE 5** IDO1 knockdown inhibits bladder cancer cell proliferation, migration, and invasion, and induced apoptosis and modulation of EMT markers. (A) Cell viability CCK-8 assay. T24 and UMUC3 cells were transfected with IDO1 or negative control siRNA and then subjected to the CCK-8 assay. (B) Colony formation assay. T24 and UMUC3 cells were transfected with IDO1 or negative control siRNA and then subjected to colony formation (x 200) and Transwell assays. (C) Western blot. Levels of the EMT-associated markers were analyzed in T24 and UMUC3 cells after IDO1 knockdown by using Western blot. (D) Transwell migration assay. (E) Transwell invasion assay. (F) Flow cytometric Annexin V-PI double staining assay in T24 and UMUC3 cells after knockdown of IDO1. \*P < 0.05.



**FIGURE 7** miR-153 targets IDO1 and modulates angiogenesis through IL6/STAT3/VEGF signaling. (A, B) ELISA. IL<sub>6</sub> expression in T24 and UMUC3 cells (overexpression of miR-153 or knockdown of IDO1 and their respective negative controls) were analyzed using ELISA. (C, D) Western blot. T24 and UMUC3 cells (overexpression of miR-153 or knockdown of IDO1 and their respective negative controls) were pretreated with 100 ng/ml of IL-6 for 48 h and then subjected to Western blot analysis of STAT3, p-STAT3, and VEGF. \*p<0.05.