frontiers in Oncology

CORRECTION
published: 15 December 2020
doi: 10.3389/fonc.2020.615415

Corrigendum: Glucose-Regulated Protein 78 Signaling Regulates Hypoxia-Induced Epithelial–Mesenchymal Transition in A549 Cells

Ling-Ling Sun, Chang-Ming Chen, Jue Zhang, Jing Wang, Cai-Zhi Yang and Li-Zhu Lin *

Integrative Cancer Centre, The First Affiliated Hospital of Guangzhou University of Chinese Medicine, Guangzhou, China

OPEN ACCESS

Edited and reviewed by:
Yunkai Zhang,
Vanderbilt University Medical Center, United States

***Correspondence:**
Li-Zhu Lin
lizhulin26@yahoo.com

Specialty section:
This article was submitted to Cancer Molecular Targets and Therapeutics, a section of the journal Frontiers in Oncology

Received: *09 October 2020*
Accepted: *05 November 2020*
Published: *15 December 2020*

Citation:
Sun L-L, Chen C-M, Zhang J, Wang J, Yang C-Z and Lin L-Z (2020) Corrigendum: Glucose-Regulated Protein 78 Signaling Regulates Hypoxia-Induced Epithelial–Mesenchymal Transition in A549 Cells. Front. Oncol. 10:615415. doi: 10.3389/fonc.2020.615415

Keywords: lung cancer, lung adenocarcinoma, epithelial mesenchymal transition, hypoxia, glucose-regulated protein 78, GRP78

A Corrigendum on

Glucose-Regulated Protein 78 Signaling Regulates Hypoxia-Induced Epithelial–Mesenchymal Transition in A549 Cells

by Sun L-L, Chen C-M, Zhang J, Wang J, Yang C-Z and Lin L-Z (2019). Front. Oncol. 9:137. doi: 10.3389/fonc.2019.00137.

In the original article, there was a mistake in **Figure 1** and **2** as published. Category I images were duplicated. The corrected **Figure 1** and **2** appear 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.

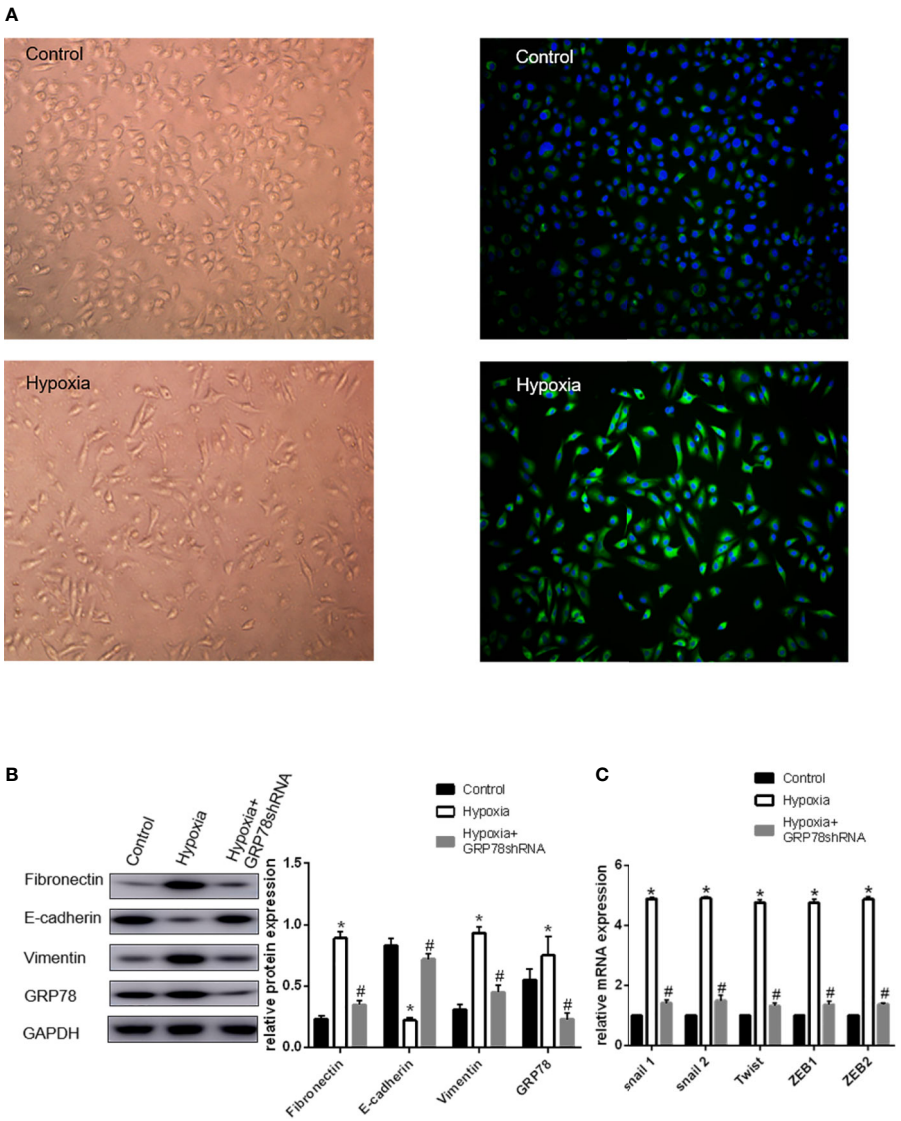

FIGURE 1 | Up-regulation of GRP78 plays an important role in hypoxia-induced EMT in A549 cells. **(A)** A549 cells acquire spindle-shaped mesenchymal morphology after 72 h of 2% O_2 hypoxia (left, 100×). GRP78 (green fluorescence) is highly expressed in A549 cells with spindle-shaped mesenchymal morphology (right, 100×). **(B)** EMT-related markers (E-cadherin, Vimentin and Fibronectin) and GRP78 were examined by Western blot analysis (left). GAPDH was used as internal control. The protein relative value (GAPDH) is plotted in the right panel (mean ± SD in three separate experiments). *$P < 0.05$, compared with A549 cells under the condition of normal oxygen, the expression of E-cadherin decreases, while those of Vimentin and Fibronectin increase in A549 cells under hypoxia (2% O_2 72 h). The expression of GRP78 also increases in A549 cells under hypoxia. #$P < 0.05$, compared with the A549 cells under the condition of hypoxia; the expression of E-cadherin increases, and those of Vimentin and Fibronectin decrease in GRP78 knockdown A549 cells under hypoxia. **(C)** EMT-related genes including Snail1, Snail2, Twist, ZEB1, and ZEB2 were examined by real-time quantitative PCR; mRNA expression relative value (control group) is plotted (mean ± SD in three separate experiments). *$P < 0.05$, compared with A549 cells in the control group, the mRNA expression levels of EMT-related genes including Snail1, Snail2, Twist, ZEB1, and ZEB2 increase under hypoxic condition (2% O_2 72 h); #$P < 0.05$, compared with A549 cells under the condition of hypoxia, the mRNA expression levels of EMT-related genes decrease in GRP78 knockdown A549 cells under hypoxia.

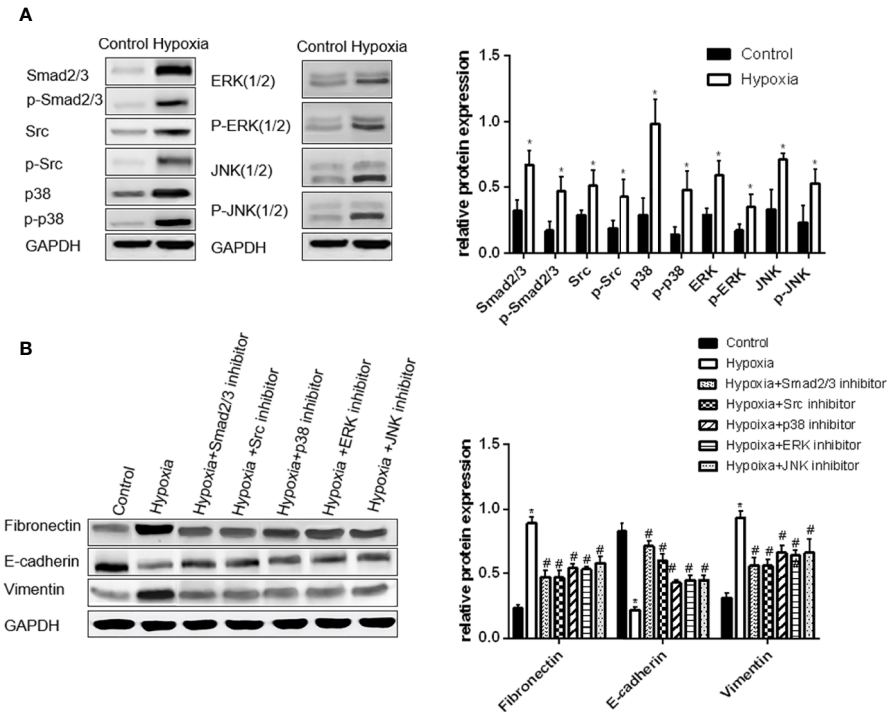

FIGURE 2 | Activation of Smad2/3, Src, p38, ERK, and JNK is important in hypoxia-induced EMT in A549 cells. **(A)** Smad2/3, Src, p38, ERK, JNK, and their phosphorylated forms were examined by Western blot analysis (left). GAPDH was used as internal control. The protein relative value (GAPDH) is plotted in the right panel (mean ± SD in three separate experiments). *$P < 0.05$, compared with A549 cells in the normal oxygen environments, the Smad2/3, Src, and MAPK proteins of A549 cells are highly regulated and activated in hypoxia environments. **(B)** EMT markers were examined by Western blot analysis (left). GAPDH was used as internal control. The protein relative value (GAPDH) is plotted in the right panel (mean ± SD in three separate experiments). *$P < 0.05$, compared with A549 cells in the normal oxygen environments, the EMT process of A549 cells under hypoxia is activated; #$P < 0.05$, compared with A549 cells in the hypoxia environments, the EMT process of A549 cells under hypoxia is inhibited separately by Smad2/3, Src, p38, ERK, and JNK inhibitors. The expression levels of Fibronectin and Vimentin decrease, and that of E-cadherin increases.