

CORRECTION

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Correction: Protocatechuic aldehyde acts synergistically with dacarbazine to augment DNA double-strand breaks and promote apoptosis in cutaneous melanoma cells

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Following the publication of the original article [1], it was noted that due to a typesetting error the figure images were paired incorrectly and some information was lost. The correct Figs. 1, 2, 3 and 4 are given below.

The correct figures and captions have been included in this correction, and the original article has been corrected.

Reference

1. Pei J, Su Z, Zeng X, et al. Protocatechuic aldehyde acts synergistically with dacarbazine to augment DNA double-strand breaks and promote apoptosis in cutaneous melanoma cells. *BMC Complement Med Ther.* 2023;23:111. <https://doi.org/10.1186/s12906-023-03933-w>.

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Fig. 1 Protocatechuic aldehyde synergistically enhances DTIC cytotoxicity to melanoma cells. **A** Dose-response curves for PA, DTIC or DTIC combined with a certain concentration of PA for 72 h in A375 and SK-MEL-28 cells. **B** Dose-response curves for A375 and SK-MEL-28 cells treated with a range of concentrations of PA, DTIC or their combinations. **C** Synergy scores were calculated from the data represented in **B** for PA combined with DTIC for A375 and SK-MEL-28 cells. The left panel represents the synergy scores from ZIP model. The right panel represents the synergy scores from Bliss model. **** $p < 0.0001$

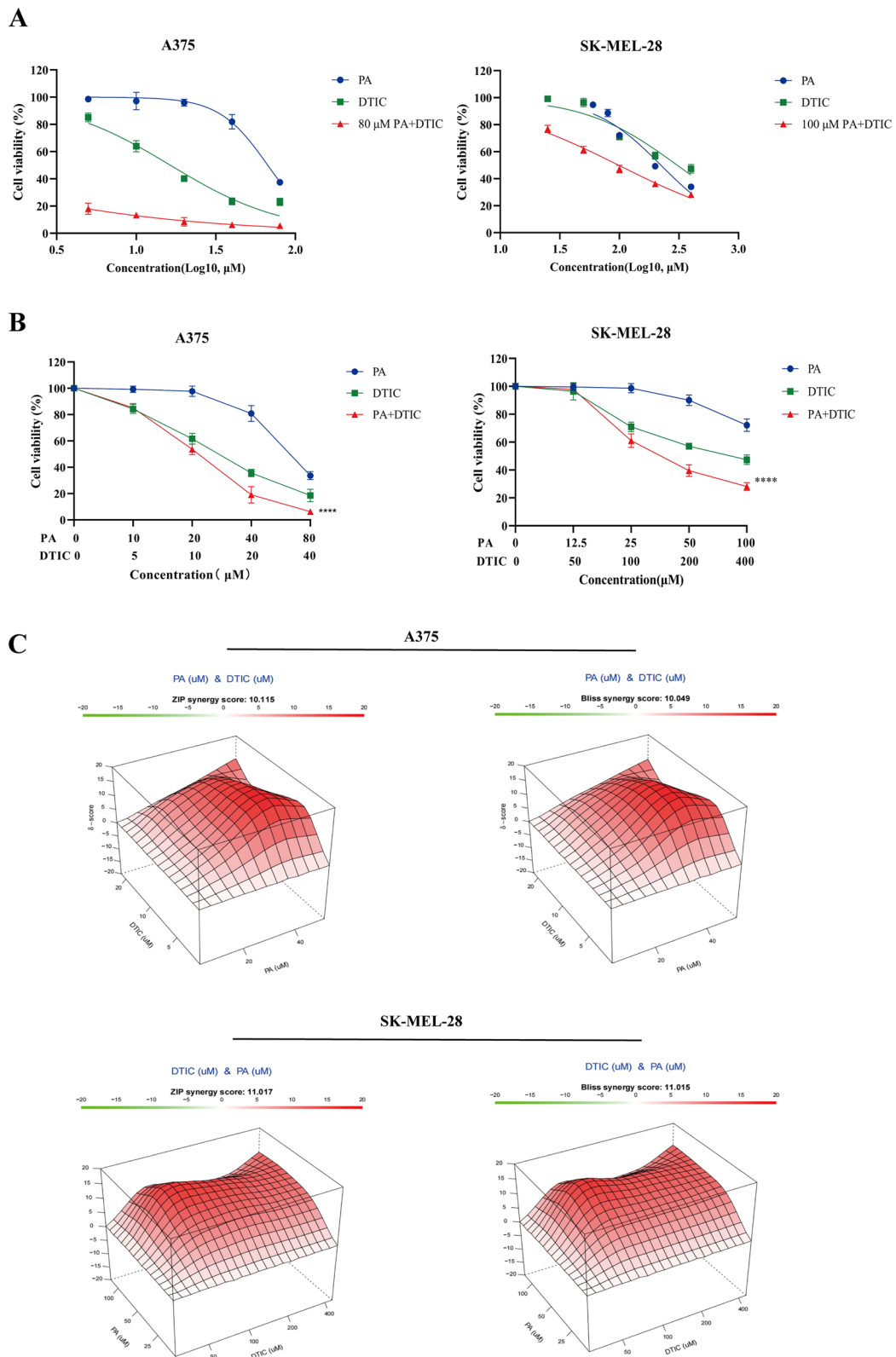


Fig. 1 (See legend on previous page.)

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Fig. 2 Combination of PA and DTIC increased DNA-double strand breaks and apoptosis in A375 and SK-MEL-28 cells. **A** The double-strand breaks in A375 and SK-MEL-28 cells were assessed by neutral comet assay. **B** Quantification of DNA percentages in comet tails in A. **C** γ -H2AX levels after 72 h of treatment with DMSO, PA, DTIC or combination of PA and DTIC in A375 and SK-MEL-28 cells. **D** Quantification of the relative γ -H2AX levels in **C**. **E** Cell apoptosis was analyzed by flow cytometry. The combined treatment showed the most apoptosis induction. **F** Quantification of apoptosis ratios in **E**. **G** Cleaved caspase-3 protein levels after 72 h of treatment with DMSO, PA, DTIC or combination of PA and DTIC in A375 and SK-MEL-28 cells. Right panel represents quantification of the relative cleaved caspase-3 protein levels in **G**. ns = no significant, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ and **** $p < 0.0001$

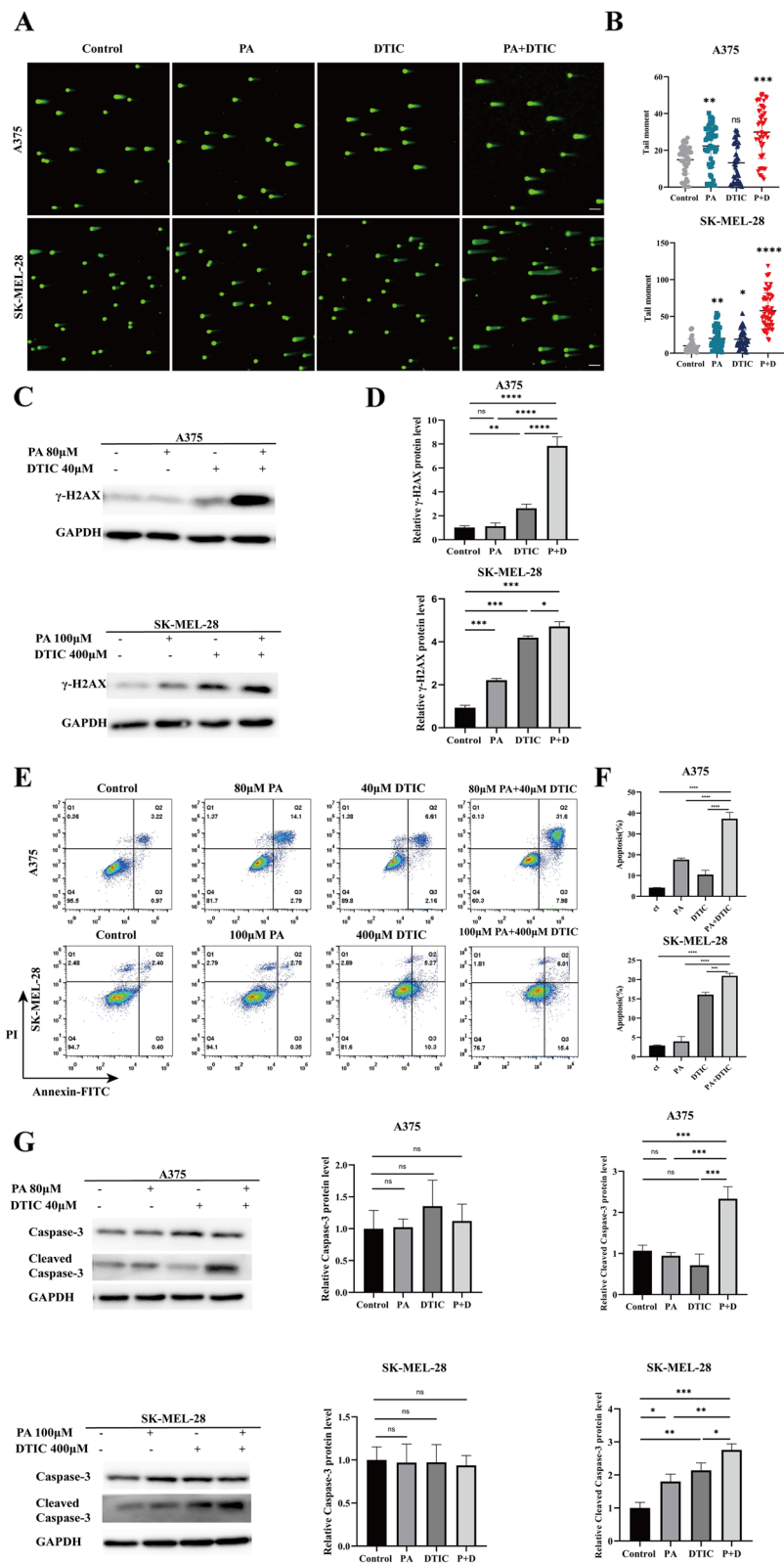


Fig. 2 (See legend on previous page.)

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Fig. 3 PA promotes MGMT degradation in melanoma cells. **A-B** Left panel shows western blot analysis for MGMT levels in A375 and SK-MEL-28 cells after 72h of treatment with DMSO, PA, DTIC or combination of PA and DTIC. Right panel represents the quantification of the MGMT protein levels for the left panel. **C** MGMT mRNA expression in A375 and SK-MEL-28 after 72 h PA treatment. **D-E** A375 and SK-MEL-28 were treated with cycloheximide in the presence or absence PA for 0-8 h hours. Western blot showed the MGMT degradation rates. Right panel represents quantification of the MGMT protein levels. **F-G** A375 and SK-MEL-28 were treated with MG132 combined with cycloheximide in the presence or absence of PA for 0-8 h hours. The MGMT protein levels were analyzed by western blot. Right panel represents quantification of the MGMT protein levels. ns = no significant, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ and **** $p < 0.0001$

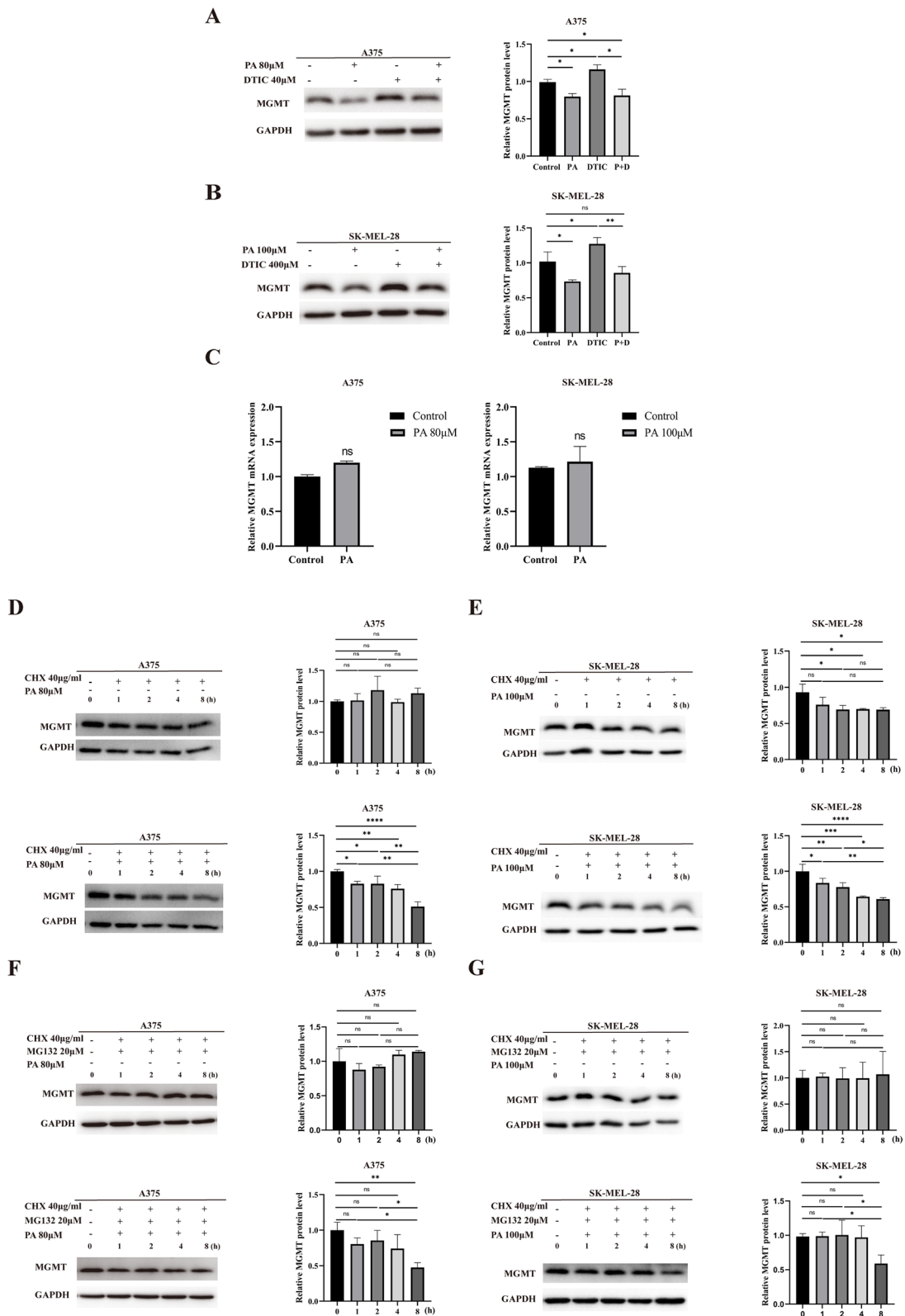


Fig. 3 (See legend on previous page.)

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Fig. 4 MGMT is required for PA-mediated synergistic effect. **A** The shRNA-mediated knockdown of MGMT was validated by western blot. Right panel represents the quantification of the MGMT protein levels in **A**. **B** Knockdown of MGMT increased the DTIC sensitivities in A375 and SK-MEL-28 cells. **C** Dose-response curves for MGMT-depleted melanoma cells treated with PA, DTIC or their combinations. The selected concentrations for treatment are identical with those in Fig. 1B. **D** Synergy scores were obtained from the data represented in **C**. The synergy scores were calculated by ZIP model and Bliss model, respectively. * $p < 0.05$, ** $p < 0.01$ and **** $p < 0.0001$

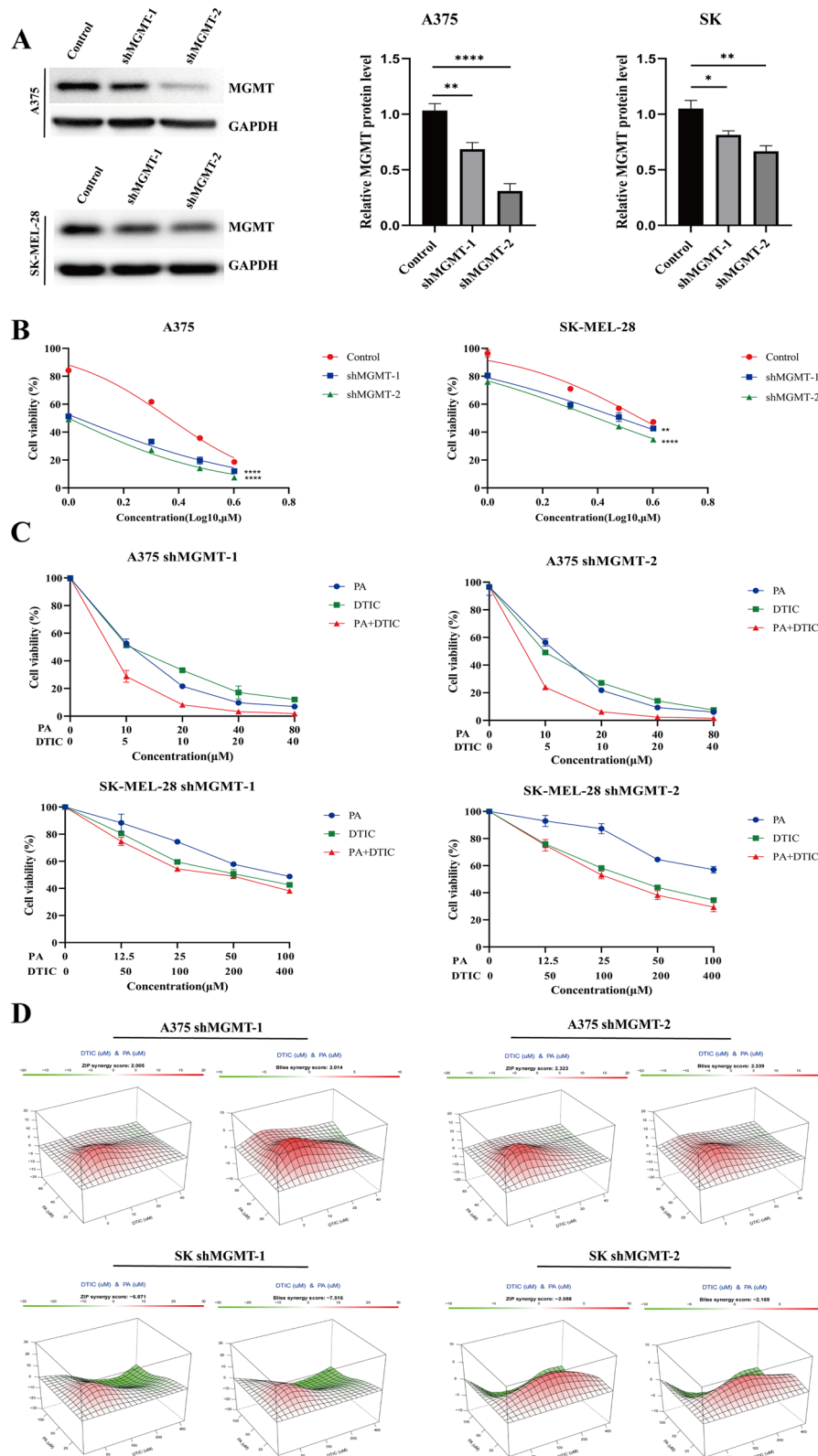


Fig. 4 (See legend on previous page.)