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CORRIGENDUM

Quantification of Synergistic Effects of Ceragenin CSA-131 Combined with Iron Oxide Magnetic Nanoparticles Against Cancer Cells [Corrigendum]

Piktel E, Markiewicz KH, Wilczewska AZ, et al. *Int J Nanomedicine*. 2020;15:4573–4589.

It has been brought to the authors attention that Figure 6E showing nanosystem-mediated DNA fragmentation in DLD-1 colorectal cancer cells is a duplicate of part of Figure 3C that was previously published in the review article: Wnorowska U, Fiedoruk K, Piktel E, et al. *J Nanobiotechnology*. 2020;18(1):3 (https://doi.org/10.1186/s12951-019-0566-z). In addition, both Figures 5E and 6E were described with incorrect treatment conditions. Data obtained during corresponding experiments were verified; consequently, Figure 5E and 6E were updated using data from the original study.

The correct Figure 5 is as follows.

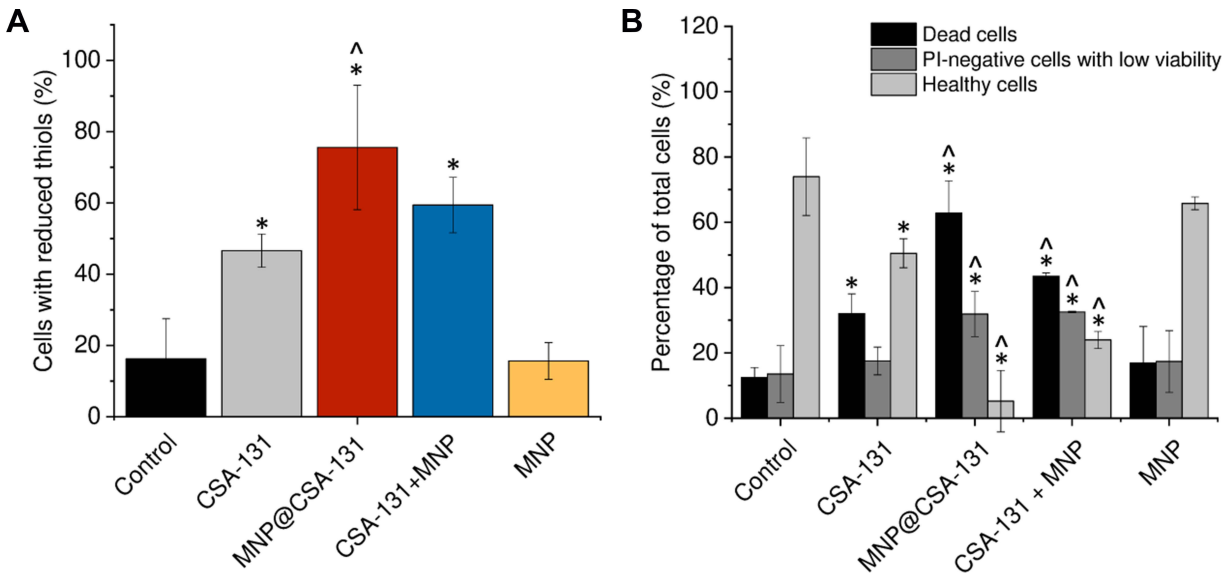

Figure 5 Continued.

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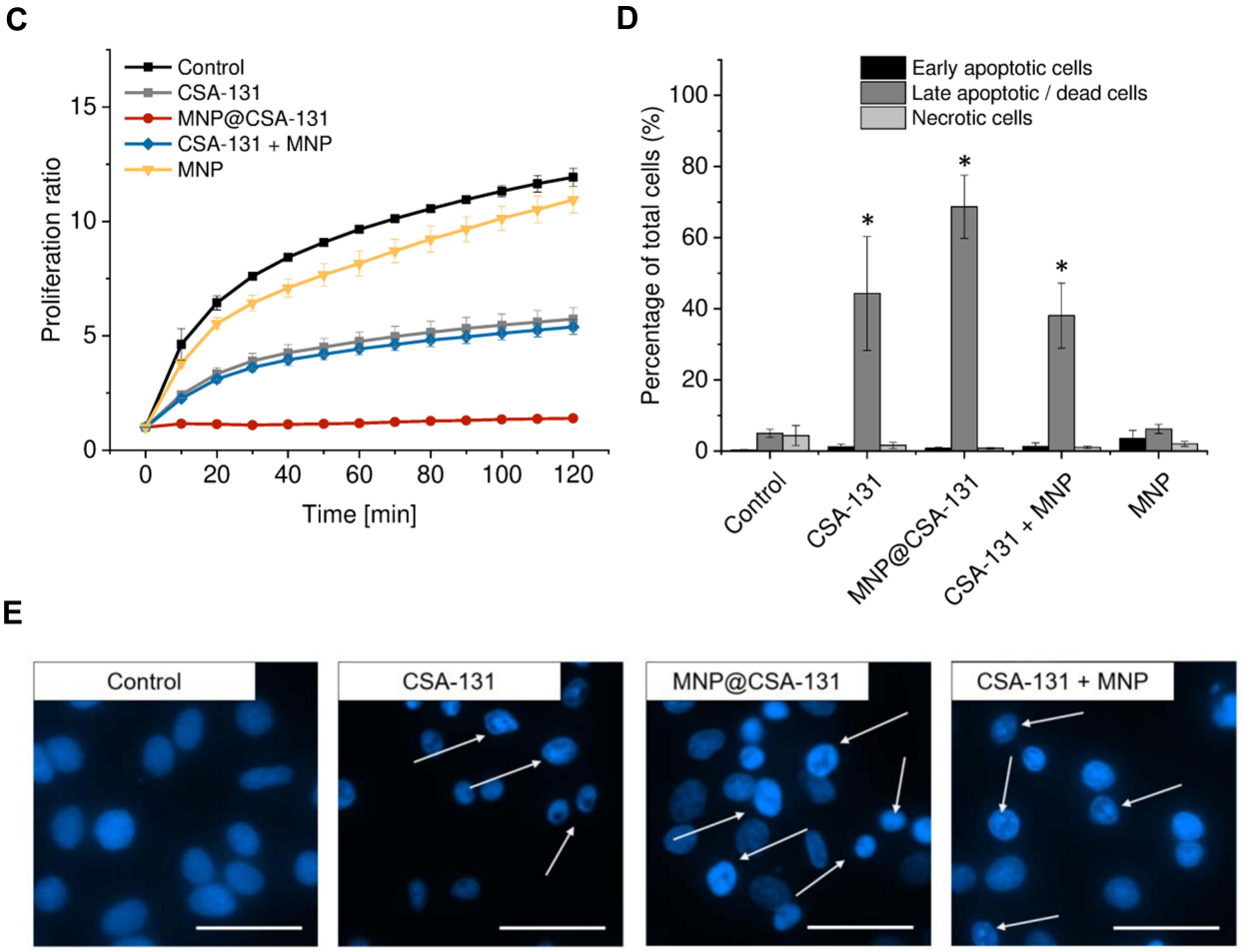

Figure 5 Anticancer activity of ceragenin CSA-131 and ceragenin-containing nanoformulations against lung carcinoma A549 cells. Increase of intracellular levels of reduced thiols in A549 cells treated with CSA-131 (grey bar), MNP@CSA-131 (red bar), CSA-131+MNP (blue bar) and MNP (yellow bar) when compared to untreated control (0 μg/mL; black bar) (**A**). The percentages of dead cells (black columns), PI-negative cells with low viability (dark grey columns) and healthy cells (light grey columns) in lung carcinoma cells treated with CSA-131, MNP@CSA-131, CSA-131 and MNP or naked MNPs (**B**). The proliferation of cancer cells treated with CSA-131 (grey squares), MNP@CSA-131 (red circles), CSA-131 + MNP (blue diamonds) and MNP (yellow inverted triangles) when compared to untreated control (black squares) estimated using resazurin-based fluorimetric method (**C**). Induction of apoptosis in A549 cells by CSA-131 and its magnetic derivatives (**D**). Percentage of early apoptotic (black columns), late apoptotic/dead cells (dark grey columns) and dead cells (light grey columns). For the purpose of the clarity of the presented data, live cells (Annexin V-negative and 7-AAD-negative) were not presented in the provided figures. Morphological alternations in nuclei of A549 cells upon treatment with CSA-131, MNP@CSA-131 and CSA-131 + MNP when compared to uncreated cells (**E**). White arrows indicate treatment-induced morphological changes in nuclei of treated cells. All experiments were performed using agents at a concentration of 10 μg/mL for 24 h. (**A**–**D**) demonstrate results from 3 to 6 individual experiments ± SD, for panel E results from one representative experiment are shown. * and ^ indicate statistical significance (p-value <0.05) when comparing to control cells (0 μg/mL) and CSA131-treated cells, respectively. Scale bar ~50 μm.

The correct Figure 6 is as follows.

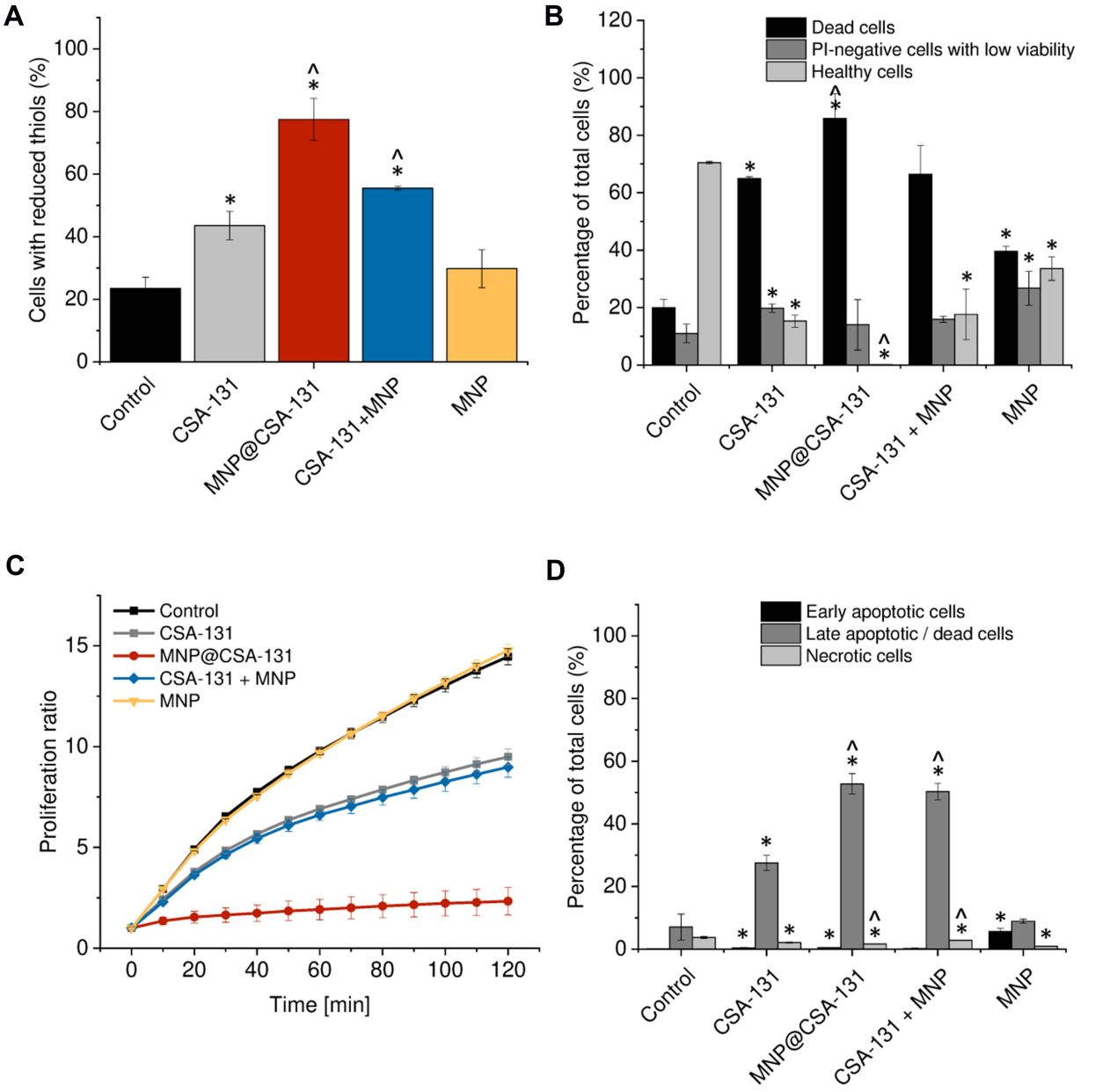

Figure 6 Continued.

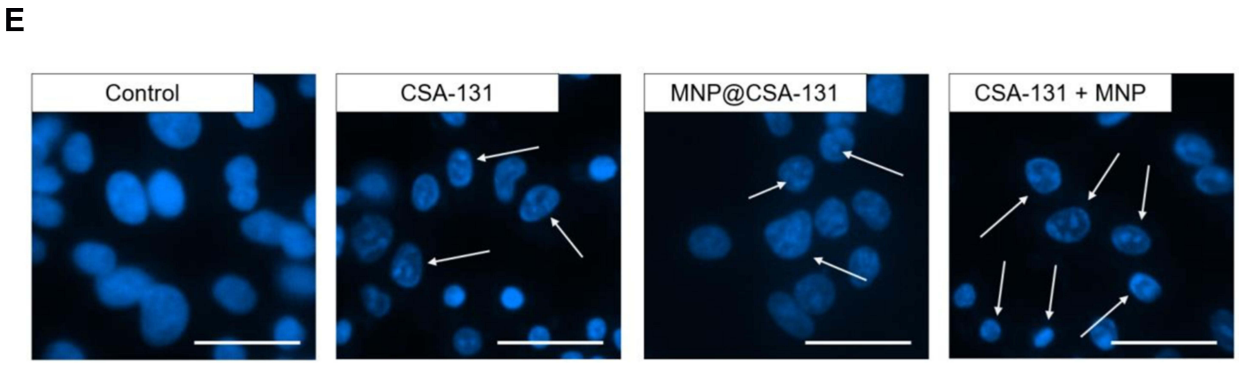

Figure 6 Anti-cancer activity of ceragenin CSA-131 and ceragenin-containing nanoformulations against colon cancer DLD-1 cells. Increase of intracellular levels of reduced thiols in DLD-1 cells treated with CSA-131 (grey bar), MNP@CSA-131 (red bar), CSA-131+MNP (blue bar) and MNP (yellow bar) when compared to untreated control (0 μg/mL; black bar) (**A**). The percentages of dead cells (black columns), PI-negative cells with low viability (dark grey columns) and healthy cells (light grey columns) in colon carcinoma cells treated with CSA-131, MNP@CSA-131, CSA-131 and MNP or naked MNPs (**B**). The proliferation of cancer cells treated with CSA-131 (grey squares), MNP@CSA-131 (red circles), CSA-131 + MNP (blue diamonds) and MNP (yellow inverted triangles) when compared to untreated control (black squares) estimated using resazurin-based fluorimetric method (**C**). Induction of apoptosis in DLD-1 cells by CSA-131 and its magnetic derivatives (**D**). Percentage of early apoptotic (black columns), late apoptotic/dead cells (dark grey columns) and dead cells (light grey columns). For the purpose of the clarity of the presented data, live cells (Annexin V-negative and 7-AAD-negative) were not presented in the provided figures. Morphological alternations in nuclei of DLD-1 cells upon treatment with CSA-131, MNP@CSA-131 and CSA-131 + MNP when compared to uncreated cells (**E**). White arrows indicate treatment-induced morphological changes in nuclei of treated cells. All experiments were performed using agents at a concentration of 10 μg/mL for 24 h. (**A**–**D**) demonstrate results from 3 to 6 individual experiments ± SD, for (**E**) results from one representative experiment are shown. * and ^ indicate statistical significance (p-value <0.05) when comparing to control cells (0 μg/mL) and CSA131-treated cells, respectively. Scale bar ~50 μm.

The authors sincerely apologize for these errors and guarantee that they do not impact the interpretation of the presented results and conclusions.