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CORRIGENDUM

Biodegradable Materials with Disulfide-Bridged-Framework Confine Photosensitizers for Enhanced Photo-Immunotherapy [Corrigendum]

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On page 8323, the Methods and Results sections have been updated. The revised abstract section should read as follows:

Purpose: Photodynamic therapy (PDT) with spatiotemporal controlled and noninvasive advantages has obtained growing attention in cancer treatment. Nevertheless, PDT still suffers from self-aggregation-induced photosensitizer quenching and reactive oxygen species (ROS) scavenging in cancer cells with abundant glutathione (GSH) pools, leading to insufficient performance.

Methods: Photosensitizer Ce6-loaded nanocarrier (SSNs) with a disulfide-bond-bridged silica framework were developed for enhanced photo-immunotherapy. After studying the GSH-responsive matrix degradation and controlled release of Ce6, the GSH depletion and ROS generation were determined. The tumor killing and immunogenic cell death effects of SSNs@Ce6-mediated phototherapy were investigated in vitro. The tumor accumulation, therapeutic efficacy and safety profile of photo-immunotherapy were also evaluated in vivo.

Results: Such SSNs spatially confine photosensitizer Ce6 in the matrix to prevent self-aggregation. Under the high GSH level of cancer cells, the disulfide-bond-bridged framework was degradable and triggered the exposure of photosensitizers to oxygen, accelerating the ROS generation during PDT. In addition, GSH depletion via the break of the disulfide-bond increased the ROS level, together resulting in efficient tumor killing outcomes with a considerable immunogenic cell death effect in vitro. Importantly, the SSNs@Ce6 accumulated in the tumor site and exhibited enhanced PDT efficacy with low systemic toxicity in vivo. Notably, SSNs@Ce6-miediated PDT completely eradicated 4T1 tumors when combined with the PD-1 checkpoint blockade.

Conclusion: The confinement of photosensitizers in a biodegradable disulfide-bridged-framework provides a promising strategy to unleash the potential of photosensitizers in PDT, especially in combined cancer photo-immunotherapy.

The authors apologize for this error and advise it does not affect the results of the paper.

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