

Editorial

Development of Multifunctional Nanoparticles for Therapy and/or Diagnosis

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The design of multifunctional nanoparticles for diagnostic and/or therapeutic purposes continues to be a subject of tremendous research. Indeed, such nanocarriers associate the unique properties of multifunctional nanoparticles, which can be specifically designed for the site-specific delivery of various molecules, to those of diagnostic and/or therapeutic drugs.

This Special Issue aims to provide some recent advances in the development of those multifunctional nanovectors for diagnostic and/or therapeutic applications.

In this Special Issue, there are research articles focusing on the preparation and characterization of functional nanovectors for site-specific anti-cancer drug delivery [1–3] and review articles on the uses of polymeric nanopatforms for the targeted delivery of imaging and therapeutic molecules [4] and biomedical applications [5] and on recent advances in the design of phthalocyanine loaded polymeric nanoparticles for cancer photodynamic therapy [6].

We think that the results presented in this Special Issue might be useful for researchers working in the field of nanoparticles design for diagnostic and/or therapeutic purposes.

Lastly, I would like to sincerely thank all the authors who contributed to the success of this Special Issue with respect to the quality of their research and manuscript.



Citation: Cammas-Marion, S.

Development of Multifunctional Nanoparticles for Therapy and/or Diagnosis. *Nanomaterials* **2022**, *12*, 2321. <https://doi.org/10.3390/nano12142321>

Received: 28 June 2022

Accepted: 5 July 2022

Published: 6 July 2022

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Funding: This research received no external funding.

Acknowledgments: The invited editor and editors acknowledge all the authors who participated to this Special Issue for submitting high quality manuscript.

Conflicts of Interest: The author declares no conflict of interest.

References

1. Patil, R.; Sun, T.; Harun Rashid, M.; Israel, L.L.; Ramesh, A.; Davani, S.; Black, K.L.; Ljubimov, A.V.; Holler, E.; Ljubimova, J.Y. Multifunctional Nanopolymers for Blood–Brain Barrier Delivery and Inhibition of Glioblastoma Growth through EGFR/EGFRvIII, c-Myc, and PD-1. *Nanomaterials* **2021**, *11*, 2892. [[CrossRef](#)] [[PubMed](#)]
2. Repp, L.; Unterberger, C.J.; Ye, Z.; Feltenberger, J.B.; Swanson, S.M.; Marker, P.C.; Kwon, G.S. Oligo(Lactic Acid)₈-Docetaxel Prodrug-Loaded PEG-*b*-PLA Micelles for Prostate Cancer. *Nanomaterials* **2021**, *11*, 2745. [[CrossRef](#)] [[PubMed](#)]
3. Brossard, C.; Vlach, M.; Vène, E.; Ribault, C.; Dorcet, V.; Noiret, N.; Loyer, P.; Lepareur, N.; Cammas-Marion, S. Synthesis of Poly(Malic Acid) Derivatives End-Functionalized with Peptides and Preparation of Biocompatible Nanoparticles to Target Hepatoma Cells. *Nanomaterials* **2021**, *11*, 958. [[CrossRef](#)] [[PubMed](#)]
4. Ljubimova, J.Y.; Ramesh, A.; Israel, L.L.; Holler, E. Small-Sized Co-Polymers for Targeted Delivery of Multiple Imaging and Therapeutic Agents. *Nanomaterials* **2021**, *11*, 2996. [[CrossRef](#)] [[PubMed](#)]

5. Thompson, M.; Scholz, C. Highly Branched Polymers Based on Poly(amino acid)s for Biomedical Applications. *Nanomaterials* **2021**, *11*, 1119. [[CrossRef](#)] [[PubMed](#)]
6. Borzęcka, W.; Domiński, A.; Kowalczyk, M. Recent Progress in Phthalocyanine-Polymeric Nanoparticle Delivery Systems for Cancer Photodynamic Therapy. *Nanomaterials* **2021**, *11*, 2426. [[CrossRef](#)] [[PubMed](#)]