

Carrier-Free Nanoparticle Formulation with Good Circulation Stability

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Categories:

- Biotechnology
- Pharmaceuticals

Keywords:

- Biotechnology
- Drug Delivery
- Medical/Health
- Micro & Nanotechnologies
- Pharmaceuticals

Researchers at Purdue University have developed a method to produce pharmaceutical nanocrystals comprised of more than 85 percent of their respective active ingredients. These nanocrystals are coated with albumin to prevent the immune response and allow the nanocrystals to target cancerous cells unhindered. These nanocrystals have the potential to increase the effectiveness of a wide range of drugs as they contain a much greater percentage of active ingredients, allow for increased bioavailability, and avoid immune recognition.

Advantages:

- Increases bioavailability of insoluble drugs
- Fewer adverse effects
- Avoids immune recognition

Potential Applications:

- Drug formulation

Related Publications:

J. Park, et al., Albumin-coated nanocrystals for carrier-free delivery of paclitaxel. *Journal of Controlled Release* (2016). <http://dx.doi.org/10.1016/j.jconrel.2016.12.040>

Enhancing Docetaxel Delivery to Multidrug-Resistant Cancer Cells with Albumin-Coated Nanocrystals

Sheryhan F. Gad, Joonyoung Park, Ji Eun Park, Gihan N. Fetih, Sozan S. Tous, Woojin Lee, and Yoon Yeo

Molecular Pharmaceutics 2018 15 (3), 871-881

DOI: 10.1021/acs.molpharmaceut.7b00783

<https://pubs.acs.org/doi/10.1021/acs.molpharmaceut.7b00783>

A Comparative In Vivo Study of Albumin-Coated Paclitaxel Nanocrystals and Abraxane
Joonyoung Park, Ji Eun Park, Victoria E. Hedrick, Karl V. Wood, Connie Bonham, Woojin Lee,
Yoon Yeo,

First published: 23 March 2018

<https://doi.org/10.1002/sml.201703670>

Expanding therapeutic utility of carfilzomib for breast cancer therapy by novel albumin-coated
nanocrystal formulation,

Journal of Controlled Release,

Ji Eun Park, Joonyoung Park, Yearin Jun, Yunseok Oh, Gongmi Ryoo, Yoo-Seong Jeong,

Hytham H. Gadalla, Jee Sun Min, Jung Hwan Jo, Myung Geun Song, Keon Wook Kang, Soo

Kyung Bae, Yoon Yeo, Woojin Lee,

Volume 302, 2019,

Pages 148-159,

ISSN 0168-3659,

<https://doi.org/10.1016/j.jconrel.2019.04.006>.

(<https://www.sciencedirect.com/science/article/pii/S0168365919301981>)

People:

- Yeo, Yoon (Project leader)
- Park, Joonyoung
- Sun, Bo

Intellectual Property:

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