

# Biomaterials Science

An international high impact journal exploring the underlying science behind the function, interactions and design of biomaterials

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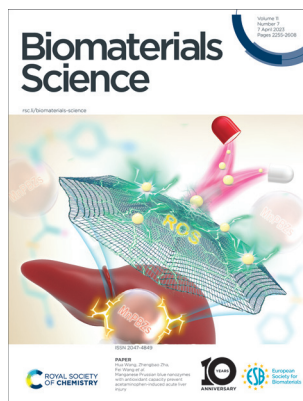
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ISSN 2047-4849 CODEN BSICCH 11(7) 2255–2608 (2023)



**Cover**  
See Sabina Quader, Rosalía Rodríguez-Rodríguez *et al.*, pp. 2336–2347.

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**Inside cover**  
See Hua Wang, Zhengbao Zha, Fei Wang *et al.*, pp. 2348–2358.

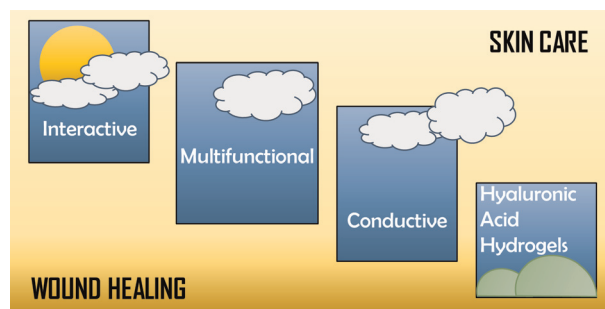
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## MINIREVIEW

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### Multifunctional conductive hyaluronic acid hydrogels for wound care and skin regeneration

Víctor Castrejón-Comas, Carlos Alemán\* and María M. Pérez-Madrigal\*

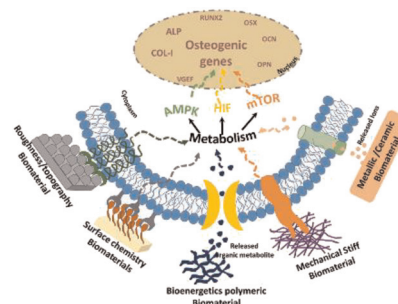


## REVIEWS

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### Cellular metabolism: a link connecting cellular behaviour with the physiochemical properties of biomaterials for bone tissue engineering

Shivani Chaudhary, Doyel Ghosal, Pravesh Tripathi and Sachin Kumar\*



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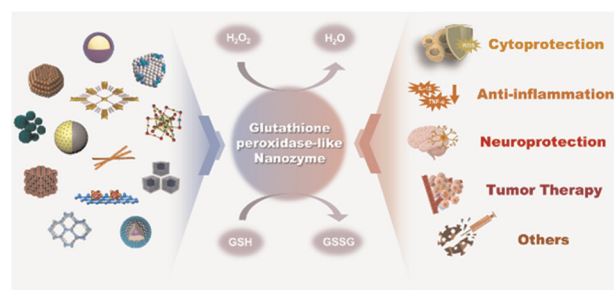


## REVIEWS

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**Glutathione peroxidase-like nanozymes: mechanism, classification, and bioapplication**

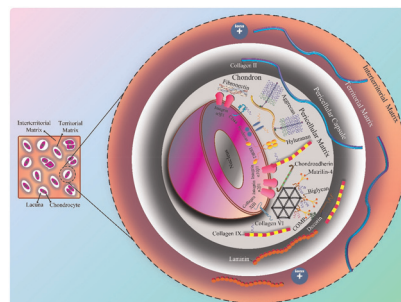
Yifan Lai, Jingyu Wang, Ning Yue, Qiaochu Zhang, Jiangjiexing Wu,\* Wei Qi and Rongxin Su\*



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**Post-decellularized printing of cartilage extracellular matrix: distinction between biomaterial ink and bioink**

Kiana Mokhtarinia and Elahe Masaeli\*



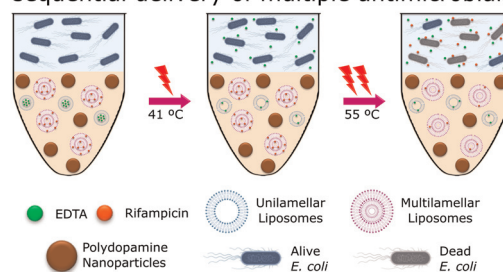
## COMMUNICATION

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**Laser-responsive sequential delivery of multiple antimicrobials using nanocomposite hydrogels**

Meera Patel, Alexander L. Corbett, Aarushi Vardhan, Keuna Jeon, Nesha May O. Andoy and Ruby May A. Sullan\*

## sequential delivery of multiple antimicrobials

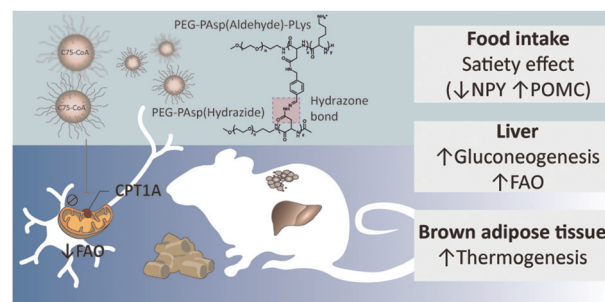


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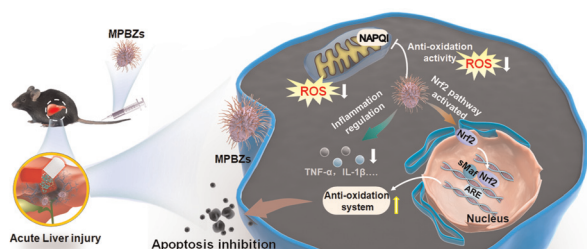
**Nanomedicine targeting brain lipid metabolism as a feasible approach for controlling the energy balance**

Jesús García-Chica, West Kristian Dizon Paraiso, Sebastián Zagmutt, Anna Fosch, Ana Cristina Reguera, Sara Alzina, Laura Sánchez-García, Shigeto Fukushima, Kazuko Toh, Núria Casals, Dolors Serra, Laura Herrero, Jordi Garcia, Kazunori Kataoka, Xavier Ariza, Sabina Quader\* and Rosalia Rodriguez-Rodriguez\*



## PAPERS

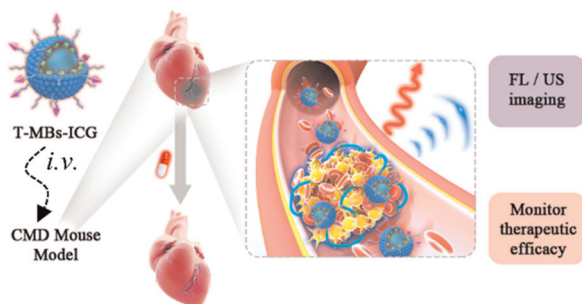
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### Manganese Prussian blue nanozymes with antioxidant capacity prevent acetaminophen-induced acute liver injury

Chongqing Chen, Haitao Wu, Qianhui Li, Menghua Liu, Fan Yin, Miaomiao Wu, Xiaoli Wei, Hua Wang,\* Zhengbao Zha\* and Fei Wang\*

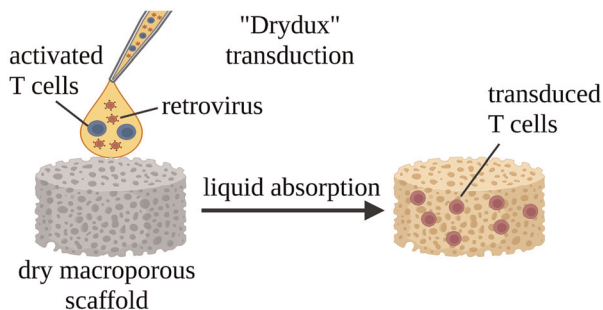
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### Dual-modal molecular imaging and therapeutic evaluation of coronary microvascular dysfunction using indocyanine green-doped targeted microbubbles

Alimina Awen, Dehong Hu, Duyang Gao,\* Zihang Wang, Yayun Wu, Hairong Zheng, Lina Guan, Yuming Mu\* and Zonghai Sheng\*

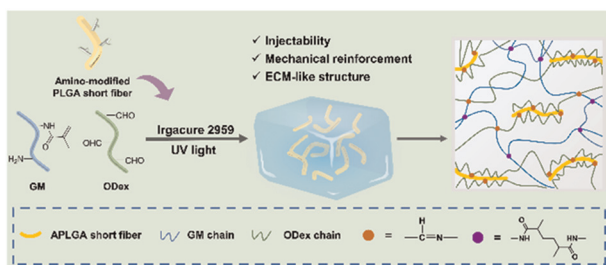
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### Absorption rate governs cell transduction in dry macroporous scaffolds

Madelyn VanBlunk, Vishal Srikanth, Sharda S. Pandit, Andrey V. Kuznetsov and Yevgeny Brudno\*

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### In situ forming double-crosslinked hydrogels with highly dispersed short fibers for the treatment of irregular wounds

Maidi Wang, Jingtao Du, Mengya Li, Filippo Pierini, Xiaoran Li,\* Jianyong Yu and Bin Ding\*

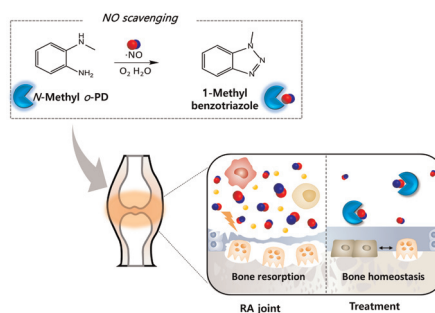


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### Nitric oxide scavengers based on o-phenylenediamine for the treatment of rheumatoid arthritis

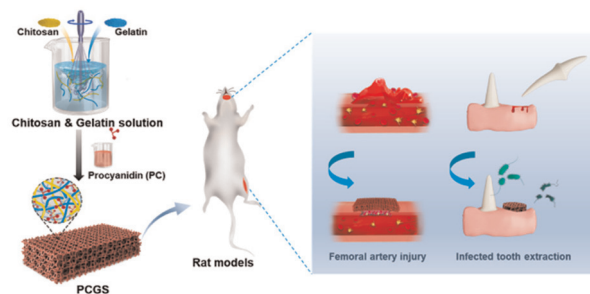
Yeong Mi Lee, Sanggi Lee and Won Jong Kim\*



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### A natural polyphenol-functionalized chitosan/gelatin sponge for accelerating hemostasis and infected wound healing

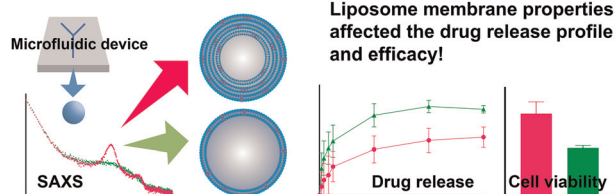
Yujie Sun, Tengfei Miao, Yu Wang, Xiaochen Wang, Jie Lin, Nana Zhao, Yang Hu\* and Fu-Jian Xu\*



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### Controlling lamellarity and physicochemical properties of liposomes prepared using a microfluidic device

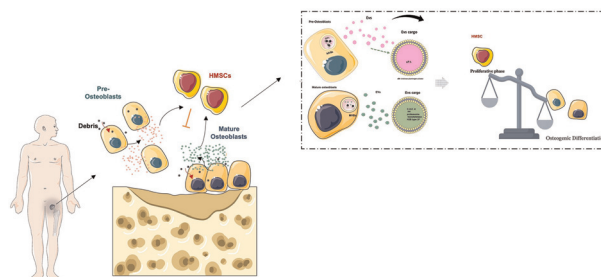
Yuka Matsuura-Sawada, Masatoshi Maeki,\* Shuya Uno, Koichi Wada and Manabu Tokeshi\*



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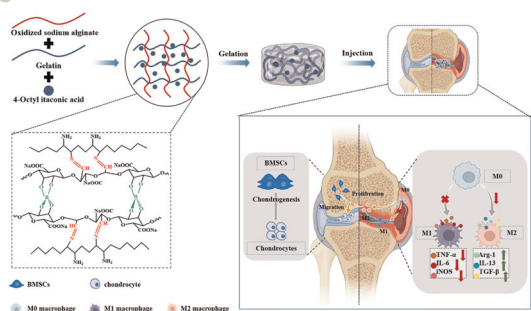
### Titanium dioxide nanoparticles affect osteoblast-derived exosome cargos and impair osteogenic differentiation of human mesenchymal stem cells

Wanderson de Souza, S. Gemini-Piperni, Liliana Grenho, Luis A. Rocha, José M. Granjeiro, Sonia A. Melo, Maria H. Fernandes and Ana R. Ribeiro\*



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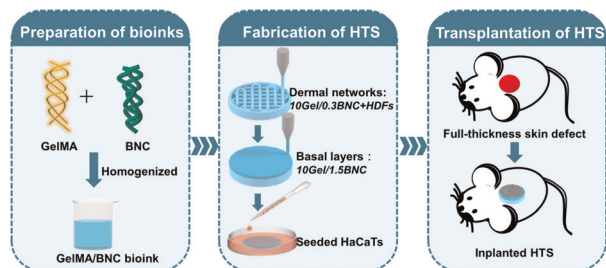
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### Injectable hydrogel loaded with 4-octyl itaconate enhances cartilage regeneration by regulating macrophage polarization

Hui Xiao, Yunsheng Dong,\* Dongdong Wan, Jinpeng Wan, Jiaying Huang, Lizong Tang, Jie Zhou, Tingting Yang, Yufei Liu and Shufang Wang\*

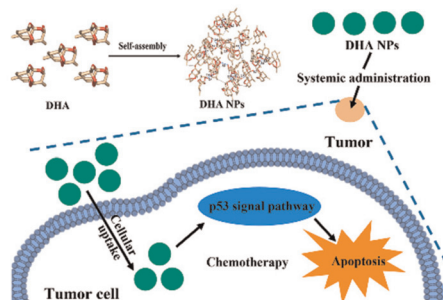
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### 3D bioprinting of heterogeneous tissue-engineered skin containing human dermal fibroblasts and keratinocytes

Meng Li, Lei Sun, Zixian Liu, Zhizhong Shen, Yanyan Cao, Lu Han, Shengbo Sang\* and Jianming Wang\*

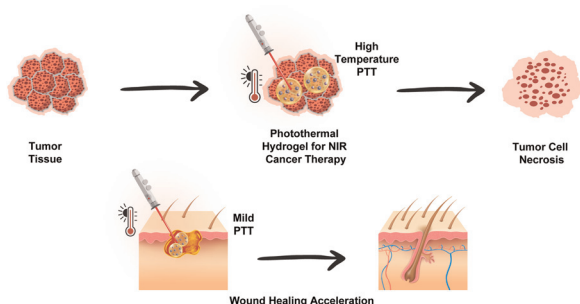
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### Self-assembly and self-delivery of the pure nanodrug dihydroartemisinin for tumor therapy and mechanism analysis

Yawei Li, Wei Zhang, Naiyuan Shi, Wenqing Li, Junxia Bi, Xianmin Feng,\* Nianqiu Shi,\* Wenhe Zhu\* and Zhigang Xie

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### Metal-coordination synthesis of a natural injectable photoactive hydrogel with antibacterial and blood-aggregating functions for cancer thermotherapy and mild-heating wound repair

Kiyan Musaie, Samin Abbaszadeh, Vahideh Nosrati-Siahmazgi, Mostafa Qahremani, Shige Wang, Mohammad Reza Eskandari, Seyyed Vahid Niknezhad, Fakhri Haghi, Yulin Li, Bo Xiao\* and Mohammad-Ali Shahbazi\*

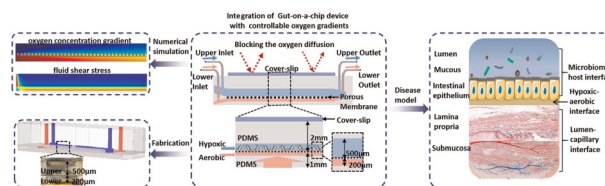


## PAPERS

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### Establishment of a gut-on-a-chip device with controllable oxygen gradients to study the contribution of *Bifidobacterium bifidum* to inflammatory bowel disease

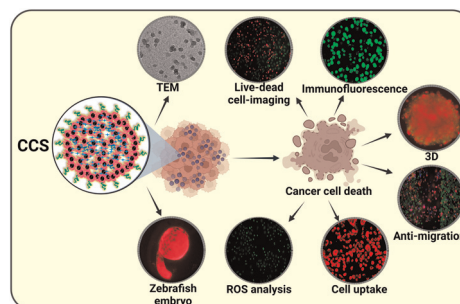
Jun Liu, Ronghao Lu, Xiaolin Zheng, Wensheng Hou, Xiaoying Wu, Hezhao Zhao, Guixue Wang and Tian Tian\*



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### Camptothecin loaded casein nanosystem for tuning the therapeutic efficacy against highly metastatic triple-negative breast cancer cells

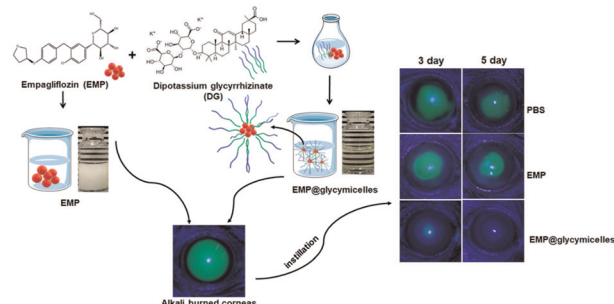
Sajmina Khatun, Monika Pebam, Chandra Lekha Putta and Aravind Kumar Rengan\*



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### A simple but novel glycymicelle ophthalmic solution based on two approved drugs empagliflozin and glycyrrhizin: *in vitro/in vivo* experimental evaluation for the treatment of corneal alkali burns

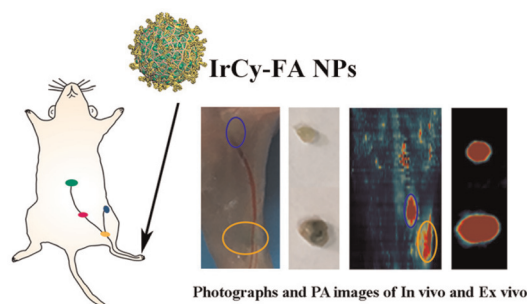
Zongjian Sun, Mingxin Zhang, Yanjun Wei, Mengshuang Li, Xianggen Wu\* and Meng Xin\*



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### The location of metastatic lymph nodes and the evaluation of lymphadenectomy by near-infrared photoacoustic imaging with iridium complex nanoparticles

Qi Yang, Yajun Yu, Chaojie Tang, Yucong Gao, Wu Wang,\* Zhiguo Zhou, Shiping Yang and Hong Yang\*

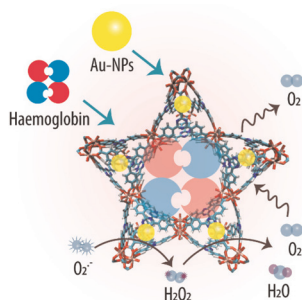


Photographs and PA images of In vivo and Ex vivo



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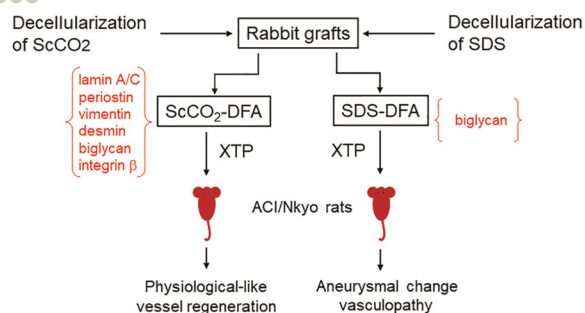
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### Metal–organic framework-based oxygen carriers with antioxidant activity resulting from the incorporation of gold nanozymes

Xiaoli Liu, Nancy Patricio Domingues, Emad Oveisi, Clara Coll-Satue, Michelle Maria Theresia Jansman, Berend Smit and Leticia Hosta-Rigau\*

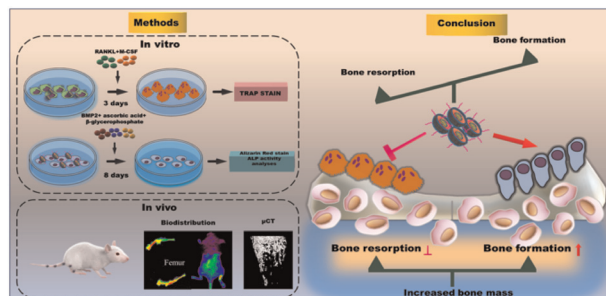
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### Supercritical carbon dioxide-decellularized arteries exhibit physiologic-like vessel regeneration following xenotransplantation in rats

Shih-Ying Sung, Yi-Wen Lin, Chin-Chen Wu, Chih-Yuan Lin, Po-Shun Hsu, Srinivasan Periasamy, Balaji Nagarajan, Dar-Jen Hsieh, Yi-Ting Tsai,\* Chien-Sung Tsai\* and Feng-Yen Lin\*

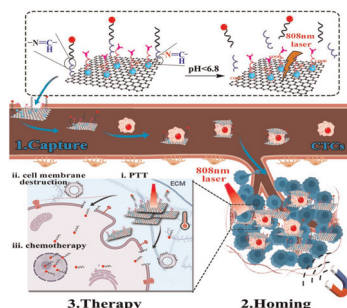
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### Nano-formulations for bone-specific delivery of siRNA for *Crkl* silencing-induced regulation of bone formation and resorption to maximize therapeutic potential for bone-related diseases

Semun Seong, Veena Vijayan, Jung Ha Kim, Kabsun Kim, Inyoung Kim, Kondareddy Cherukula, In-Kyu Park\* and Nacksung Kim\*

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### Manipulation and elimination of circulating tumor cells using multi-responsive nanosheet for malignant tumor therapy

Tao Liu, Bolei Cai, Pingyun Yuan, Le Wang, Ran Tian, Taiqiang Dai, Lin Weng and Xin Chen\*



## CORRECTIONS

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**Correction: Carbazate-modified cross-linked dextran microparticles suppress the progression of osteoarthritis by ROS scavenging**

Yanfeng Ding, Zhimin Li, Wenwen Hu, Xianjing Feng, Ying Chen, Guohua Yan, Yonglin Wang, Bo Zhu, Wei Yao, Li Zheng,\* Maolin He,\* Ming Gao\* and Jinmin Zhao

2605

**Correction: Preparation and characterizations of an injectable and biodegradable high-strength iron-bearing brushite cement for bone repair and vertebral augmentation applications**

Luguang Ding, Huan Wang, Jiaying Li, Dachuan Liu, Jianzhong Bai, Zhangqin Yuan, Jiaojiao Yang, Lu Bian, Xijiang Zhao,\* Bin Li\* and Song Chen\*

