

Biomaterials Science

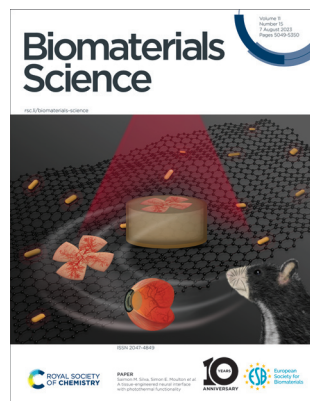
An international high impact journal exploring the underlying science behind the function, interactions and design of biomaterials

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See Saimon M. Silva,
Simon E. Moulton *et al.*,
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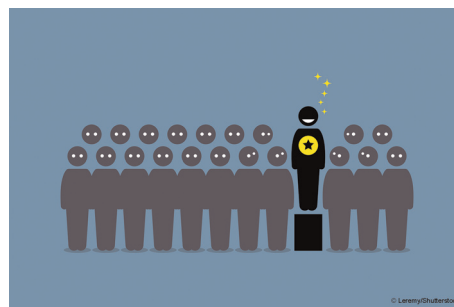
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EDITORIAL

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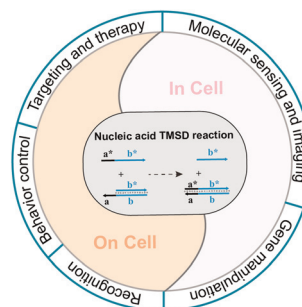


REVIEWS

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Principles of nucleic acid toehold mediated strand displacement (TMSD) reaction model and its applications in cell environment

Linlin Tang, Tao Luo, Sisi Fan, Yan Liu and Jie Song*



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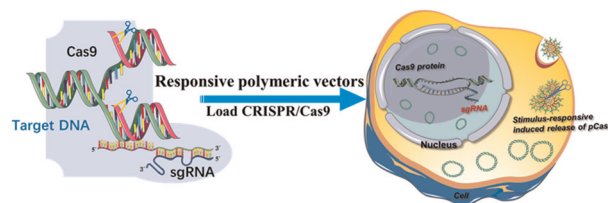


REVIEWS

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Recent advances in stimuli-responsive polymeric carriers for controllable CRISPR/Cas9 gene editing system delivery

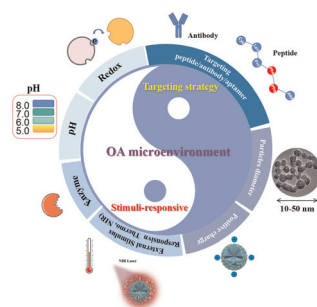
Panqin Ma, Qi Wang, Xi Luo, Liuzhou Mao, Zhanxiang Wang,* Enyi Ye, Xian Jun Loh, Zibiao Li* and Yun-Long Wu*



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Bio-responsive and multi-modality imaging nanomedicine for osteoarthritis theranostics

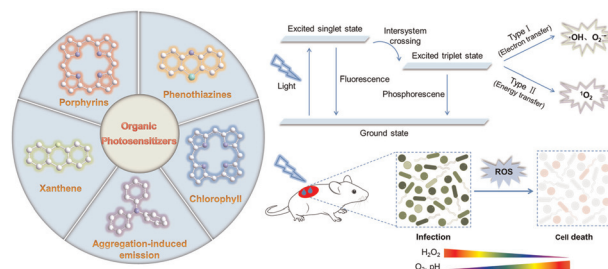
Song Xue, Guangfeng Ruan, Jia Li, Henning Madry, Chao Zhang* and Changhai Ding*



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Development of organic photosensitizers for antimicrobial photodynamic therapy

Wenya Zhou, Xiqun Jiang and Xu Zhen*

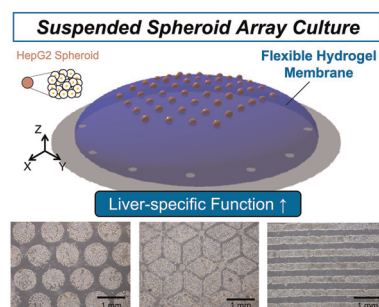


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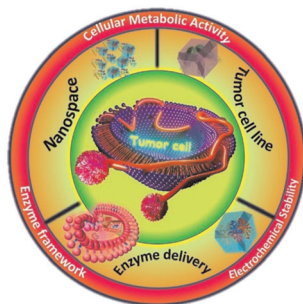
Construction of a spheroid array culture system on a suspended permeable hydrogel membrane scaffold for improving the expression of a liver-specific drug-metabolizing enzyme of HepG2 cells

Atsushi Tsuyukubo, Kana Morishita, Toshiyuki Kanamori and Kimio Sumaru*



COMMUNICATIONS

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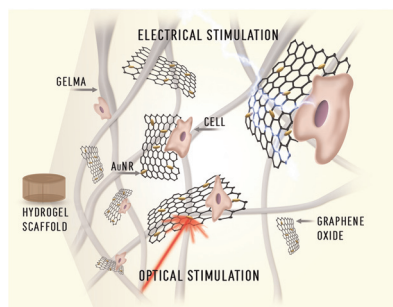


Cellular metabolic activity and electrochemical stability assay of embedded oxidoreductase enzyme confined in the nanospace of a framework exoskeleton

Tapan Dey, Netra Hiremath, Vishav Kant, Rakesh K. Sharma,* Raviraj Vankayala* and Saikat Dutta*

PAPERS

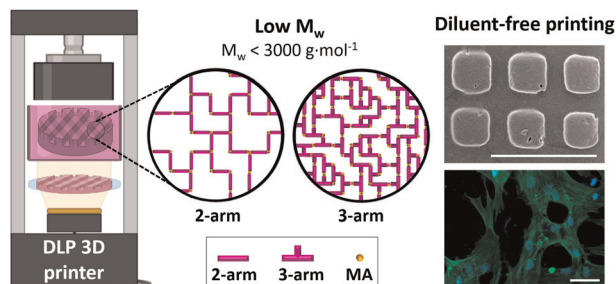
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A tissue-engineered neural interface with photothermal functionality

Adriana Teixeira do Nascimento, Alexandre Xavier Mendes, James M. Begeng, Serena Duchi, Paul R. Stoddart, Anita F. Quigley, Robert M. I. Kapsa, Michael R. Ibbotson, Saimon M. Silva* and Simon E. Moulton*

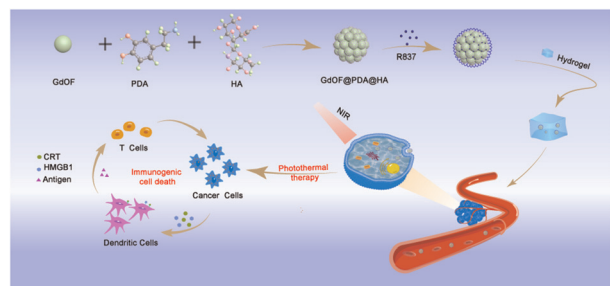
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Low molecular weight poly((D,L)-lactide-co-caprolactone) liquid inks for diluent-free DLP printing of cell culture platforms

Sandra Ramos-Díez,* Garazi Larrañaga-Jaurrieta,* Leire Iturriaga, Ander Abarrategi and Sandra Camarero-Espinosa

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NIR-II imaging-guided photothermal cancer therapy combined with enhanced immunogenic death

Yukun Wang, Wenjing Li, Bi Lin, Ying Yuan, Pengbo Ning,* Xiaofeng Tao* and Ruichan Lv*

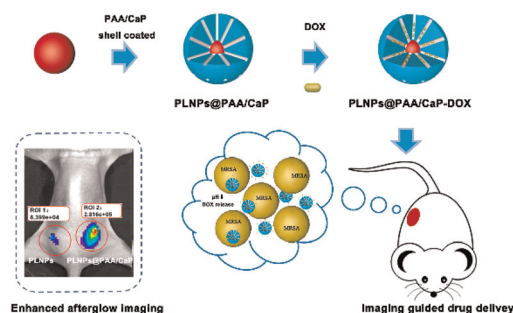


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Mesoporous polyacrylic acid/calcium phosphate coated persistent luminescence nanoparticles for improved afterglow bioimaging and chemotherapy of bacterial infection

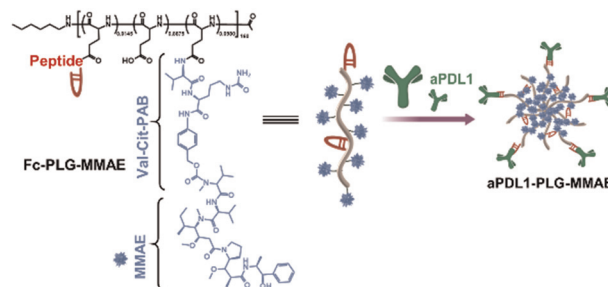
Xuan Fu, Xu Zhao, Li-Jian Chen, Piming Ma, Tianxi Liu and Xiu-Ping Yan*



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An MMAE-loaded PDL1 active targeting nanomedicine for the precision treatment of colon cancer

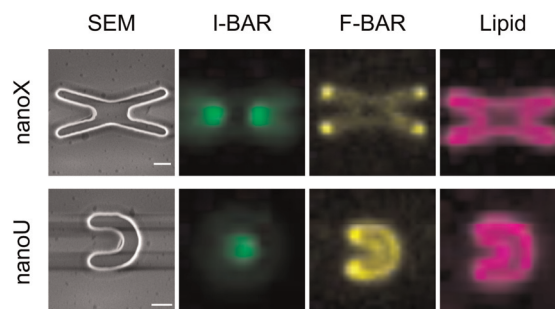
Zhenqian Zhang, Honglei Zhang, Linjie Cui, Xiaoshuang Wang, Di Wang, Zhilin Liu,* Xuefei Zhang* and Zhaohui Tang*



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A NanoCurvS platform for quantitative and multiplex analysis of curvature-sensing proteins

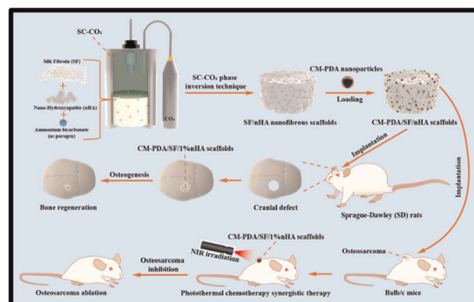
Chih-Hao Lu, Ching-Ting Tsai, Taylor Jones IV, Vincent Chim, Lasse H. Klausen, Wei Zhang, Xiao Li, Zeinab Jahed* and Bianxiao Cui*



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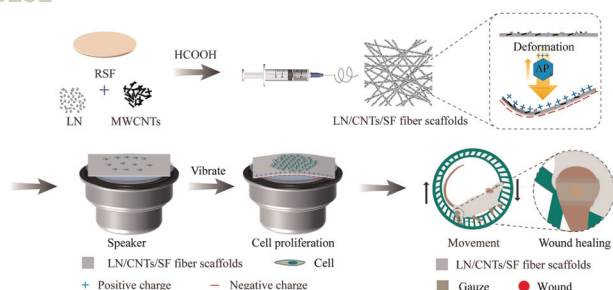
Supercritical CO₂-assisted fabrication of CM-PDA/SF/nHA nanofibrous scaffolds for bone regeneration and chemo-photothermal therapy against osteosarcoma

Ruijia Han, Yajun Min, Guanlin Li, Shilu Chen, Maobin Xie and Zheng Zhao*



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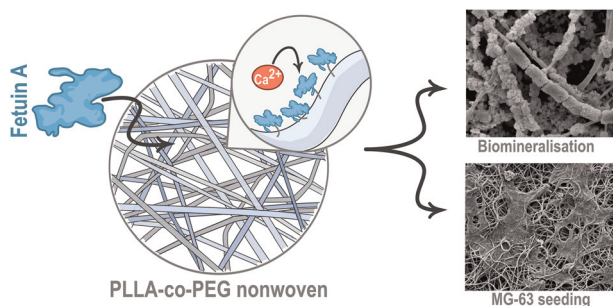
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Silk fibroin-based piezoelectric nanofibrous scaffolds for rapid wound healing

Xiaoyang Yue, Zengkai Wang, Hui Shi, Rongrong Wu, Yonghai Feng, Liang Yuan, Shuai Hou, Xiaolu Song and Lei Liu*

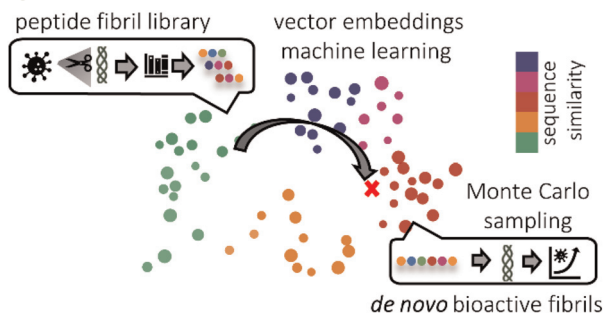
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Fetuin A functionalisation of biodegradable PLLA-co-PEG nonwovens towards enhanced biomineralisation and osteoblastic growth behaviour

Stefan Oschatz,* Michael Teske, Ulrike Burmeister, Sabine Illner, Volkmar Senz, Hermann Lang, Niels Grabow and Jana Markhoff

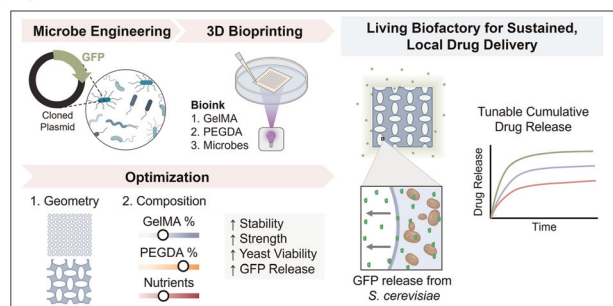
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Inverse design of viral infectivity-enhancing peptide fibrils from continuous protein-vector embeddings

Kübra Kaygisiz, Arghya Dutta, Lena Rauch-Wirth, Christopher V. Synatschke, Jan Münch, Tristan Berau* and Tanja Weil*

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Microbe-loaded bioink designed to support therapeutic yeast growth

Emma L. Etter, Mairead K. Heavey, Matthew Errington and Juliane Nguyen*



Functionalized hydrogel–microsphere composites stimulating neurite outgrowth for vascularized bone regeneration

A

Legend:

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- Neocortex
- Hippocampus
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- CA2
- CA3
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B

C

Pre-selection of fibroblast subsets prompts prevascularization of tissue engineered skin analogues

The diagram illustrates the process of creating a prevascularized skin-like construct. It begins with a cross-section of human skin, showing the epidermis and dermis. Cells are isolated from the skin. These cells are then seeded onto a porous scaffold, which is composed of a papillary-like layer and a reticular-like layer. The scaffold is seeded with cells from the epidermis (top layer) and dermis (bottom layer). The final product is a prevascularized skin-like construct, which is a bilayered structure with a papillary-like layer and a reticular-like layer, containing a network of blood vessels.

PEG-grafted arsenic trioxide-loaded mesoporous silica nanoparticles endowed with pH-triggered delivery for liver cancer therapy

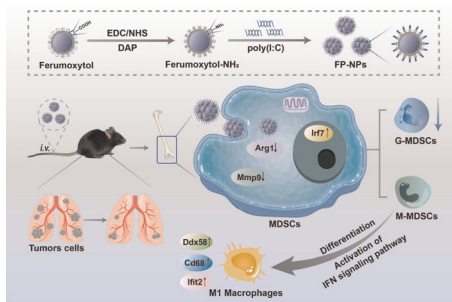
The diagram illustrates the synthesis and application of PEG-MSN@ATO. The synthesis process involves four steps: 1. MSN (mesoporous silica nanoparticle), 2. $\text{NH}_2\text{-MSN}$ (amino-functionalized MSN) via reaction with NH_3 , 3. $\text{NH}_2\text{-MSN@ATO}$ (ATO-coated MSN) via reaction with ATO, and 4. PEG-MSN@ATO (PEGylated ATO-coated MSN) via reaction with $n\text{PEG-CHO}$. The application part shows PEG-MSN@ATO being taken up by a tumor cell via endocytosis, leading to ATO release and cell death. The nanoparticles are also shown circulating in the blood.

Development of plant-based biopolymer coatings for 3D cell culture: boron–silica-enriched quince seed mucilage nanocomposites

The diagram illustrates the 3D cell culture protocol. It begins with a Quince Fruit Tree, from which Quince Fruit Seeds are extracted. These seeds are used to produce Quince Seed Mucilage. The mucilage is then combined with Boric Acid and TEOS to form a hydrogel. This hydrogel is seeded into Coated Well Plates for 3D Cell Culture. After 3 days of incubation, the resulting 3D cell culture structures are shown, with a scale bar of 500 μm .

PAPERS

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Immunologically active ferumoxylol-poly(I : C) nanomaterials inhibit metastatic melanoma by regulating myeloid-derived suppressor cell differentiation

Gaochuan Fang, Zhonghai Zhang, Bo Jiang, Yunuo Zheng, Xufeng Xiao, Tianlong Wang, Zhengkui Zhang* and Jiaojiao Zhao*

CORRECTION

5347

Correction: Construction of perfluorohexane/IR780@liposome coating on Ti for rapid bacteria killing under permeable near infrared light

Xiuhua Wang, Lei Tan, Xiangmei Liu,* Zhenduo Cui, Xianjin Yang, Kelvin W. K. Yeung, Paul K. Chu and Shuilin Wu*

