

# Biomaterials Science

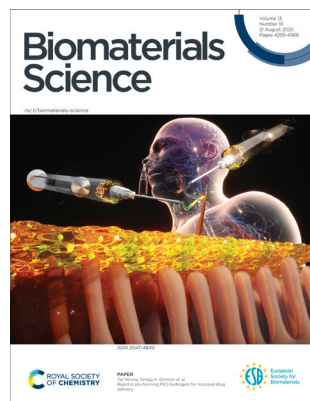
An international high impact journal exploring the underlying science behind the function, interactions and design of biomaterials

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## IN THIS ISSUE

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### Cover

See Taj Yeruva,  
Gregg A. Duncan *et al.*,  
pp. 4390–4399.

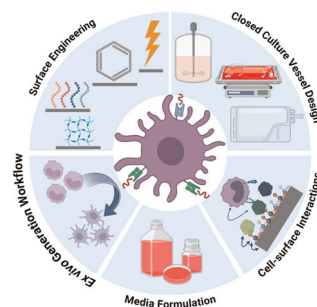
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2025, **13**, 4390.

## REVIEWS

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### Impact of culture vessel materials on biomanufacturing of dendritic cell-based immunotherapies in closed systems

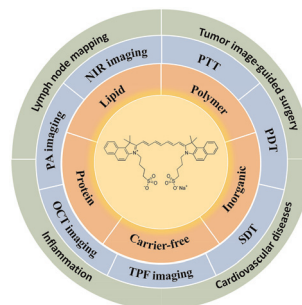
Jiyu Jessica Tian, Hamid Ebrahimi Orimi, Natalie Fekete, Nicolas Drolet, Katie Campbell, Michel L. Tremblay, Linda Peltier, Pierre Laneuville, Pierre-Luc Girard-Lauriault and Corinne A. Hoesli\*



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### Indocyanine green-based nanomedicine for theranostic applications

Jinghang Li, Shuangyu Tian, Xi Zhang, Xinyang Deng, Haixing Xu and Lesan Yan\*



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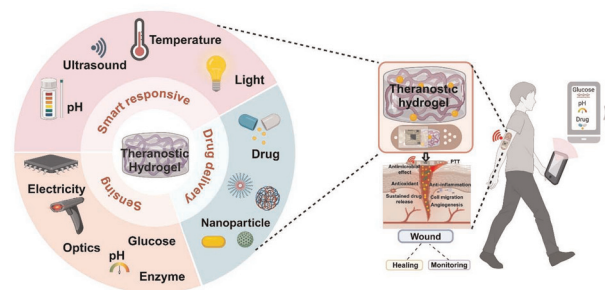
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## MINIREVIEW

4358

## Recent progress in multifunctional theranostic hydrogels: the cornerstone of next-generation wound care technologies

Laxmanan Karthikeyan and Hyun Wook Kang\*

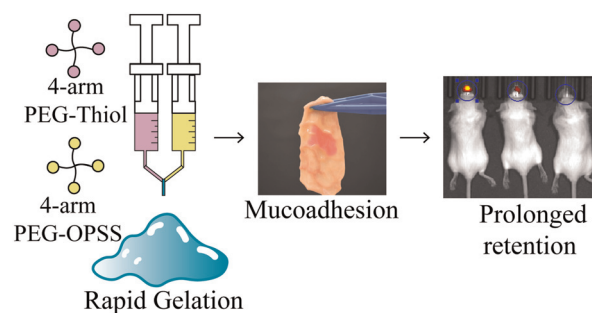


## PAPERS

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## Rapid *in situ* forming PEG hydrogels for mucosal drug delivery

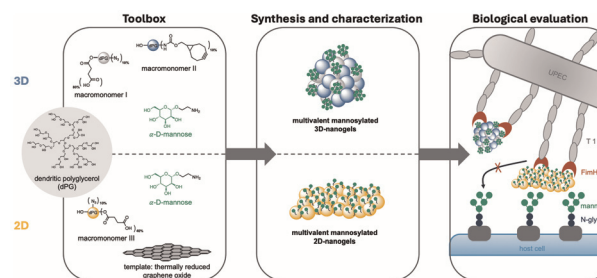
Taj Yeruva,\* Robert J. Morris III, Sahana Kumar, Luke Zhao, Peter Kofinas and Gregg A. Duncan\*



4400

## Multivalent 2D- and 3D-nanogels as carbohydrate-lectin binders

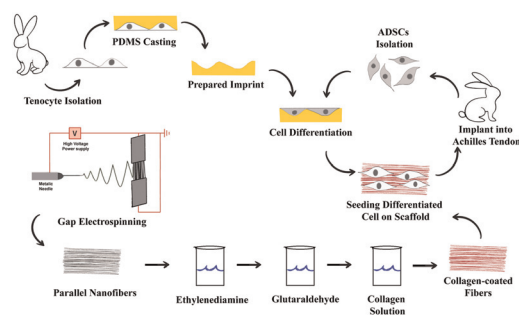
Ann-Cathrin Schmitt, Maximilian Braun, Stefanie Wedepohl, Mathias Dimde, Philip Nickl, Kai Ludwig, Tatyana L. Povolotsky\* and Rainer Haag\*



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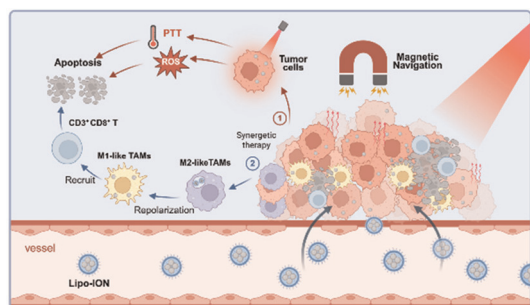
## The regenerative capacity of cell imprinting and collagen/PCL scaffolds in gastrocnemius tendon defect

Seyed Aliakbar Hosseini Toopghara, Shahin Bonakdar,\* Sara Nayyeri, Morteza Mehrjoo, Fatemeh Ale Ebrahim, Hossein Aminianfar, Farzad Mohammadian Sabour, Leila Montazeri, Mohammad Amin Hajari, Mohammad Ali Shokrgozar, Sang-Won Park\* and Mohammad Mehdi Dehghan\*



## PAPERS

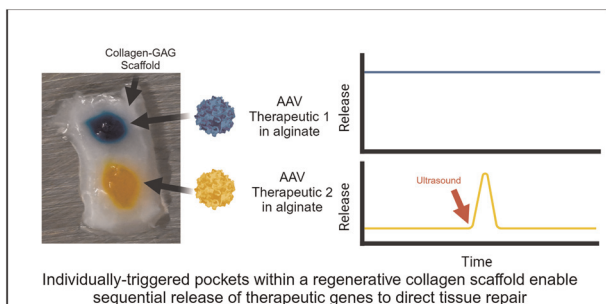
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### Magnetically actuated superparamagnetic liposomes for accurate photothermal therapy and *in situ* antitumor immunoactivation

Han Gong, Aiqing Ma, Jiacheng Ouyang, Rui Hao, Shichao Zhang\* and Wei Qiu\*

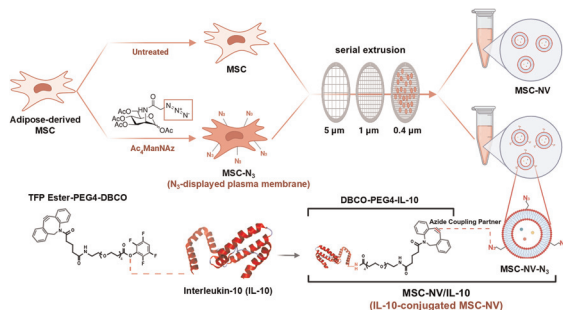
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### Combined sustained and triggered release for sequential viral-transduction from collagen-based scaffolds for tissue regeneration

John J. Amante, Bridget Twombly, Naaz Thotathil and Cathal J. Kearney\*

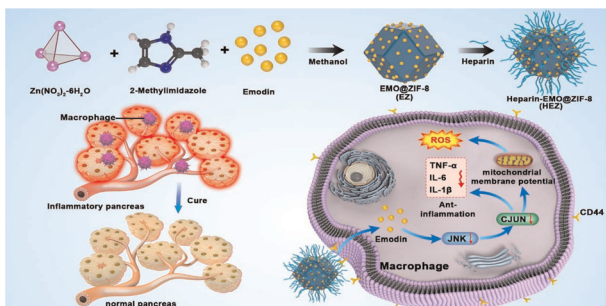
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### Metabolic click-labeling of interleukin-10 enhances the immunomodulatory potential and wound healing properties of mesenchymal stem cell-derived extracellular nanovesicles

Hee Gyeong Ko, Yun-A Kim, Jun Kwon, So Won Jeon, Jong Sang Yoon, Min-Ho Kang, Ju-Ro Lee and Han Young Kim\*

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### Macrophage-targeted emodin nanomaterials for effective acute pancreatitis treatment via modulation of the JNK pathway

Liyang Wang,\* Mengxiang Tian, Bingzhi Dong, Weiqi Li, Liang Shi, Yifan Tong, Wei Chen, Xin Yu, Hongxia Xu, Bo Shen and Hong Yu\*

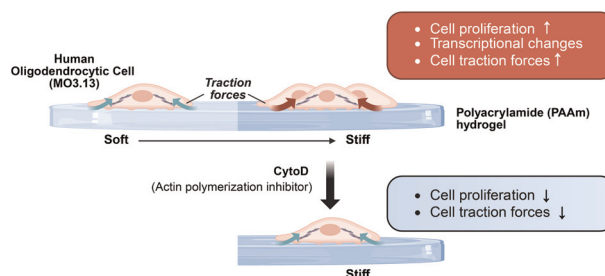


## PAPERS

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### Scaffold stiffness affects oligodendrocyte proliferation *via* cell traction forces

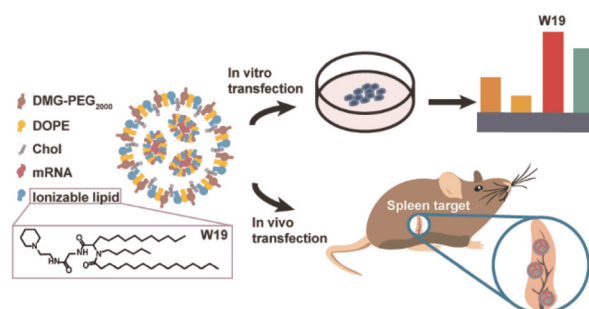
Haruki Watanabe, Akiko Uyeda, Lili Quan, Shogo Iwai, Ze Zhang, Shinjiro Umez, Tatsunori Suzuki and Rieko Muramatsu\*



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### Ugi-reaction-derived ionizable lipids with cyclic tertiary amine heads enable spleen-targeted mRNA delivery

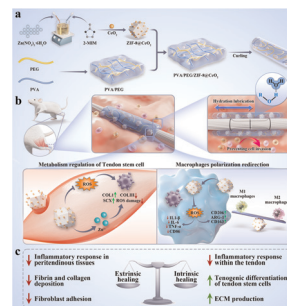
Yashuai Wang, Xiaoyin Liu, Haiyin Yang, Shuxiang Wang, Shutao Guo, Yuhua Weng, Jinchao Zhang, Luwei Li,\* Kun Ge\* and Xing-Jie Liang



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### Nano-enzymatic functionalized dual network hydrogel promotes tendon repair by modulating the inflammatory cycle and cellular behavior

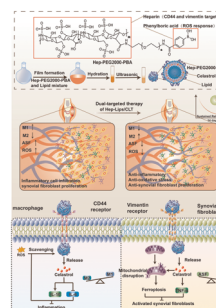
Heng Yin, Zhuo Zhang, Yi Wang, Weiyong Song, Chaoyu Pu, Yong Wang and Ke Jiang\*



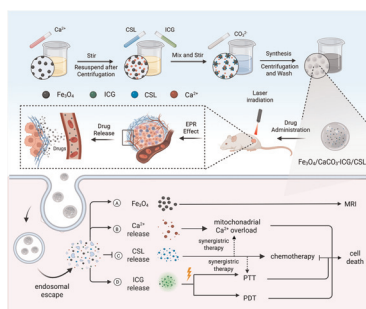
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### A dual-targeted nano-system co-regulating macrophage ROS and fibroblast ferroptosis for rheumatoid arthritis treatment

Xiaohua Wang, Tingting Gao, Jingjing Wu, Xu Zhou, Yuanyuan Chu, Lei Zhang\* and Xi Cao\*



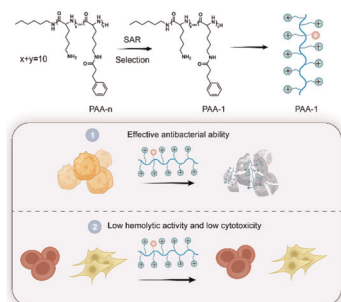
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## A pH-responsive nanoplatform enhancing tumor therapy via calcium overload-induced oxidative stress to potentiate phototherapy and chemotherapy

Shanshan Fan, Shengsheng Cui, Xinni Pan, Haisong Tan, Cheng Cao, Yueqi Zhu\* and Yanlei Liu\*

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## Structure-optimized poly( $\alpha$ -amino acid)-based antimicrobial peptide mimetics with balanced bactericidal activity and biosafety for MRSA peritonitis therapy

Hongfei Sun, Guifeng An, Sarula Bao, Wenbo Du, Ya Su, Dezhi Sun and Xiaohui Zhang\*

