

IN THIS ISSUE

eISSN 2976-8713 CODEN RPSHBW 1(4) 583–856 (2024)



Cover

See Longfei Chen and Saif A. Khan, pp. 689–704.

Image reproduced by permission of Longfei Chen and Saif A. Khan from *RSC Pharm.*, 2024, **1**, 689.



Inside cover

See Manzoor Ahmad Mir, Aijaz A. Dar, Abdul Haseeb Shah *et al.*, pp. 705–715.

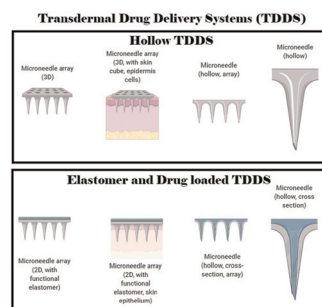
Image reproduced by permission of Aijaz A. Dar, Abdul Haseeb Shah from *RSC Pharm.*, 2024, **1**, 705.

REVIEWS

592

The etiology, pathogenesis, treatment, and development of transdermal drug delivery systems for rheumatoid arthritis

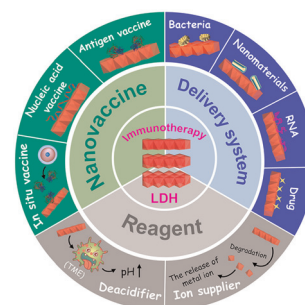
Mirza Muhammad Faran Ashraf Baig,* Chi Hin Kwan, Hongkai Wu* and Sek Ying Chair*



608

Cancer immunotherapy boosted by layered double hydroxide nanoparticles

Xiaochun Deng, Gaoming Li, Mingwu Shen* and Xiangyang Shi*



**GOLD
OPEN
ACCESS**

EES Solar

**Exceptional research on solar
energy and photovoltaics**

Part of the EES family

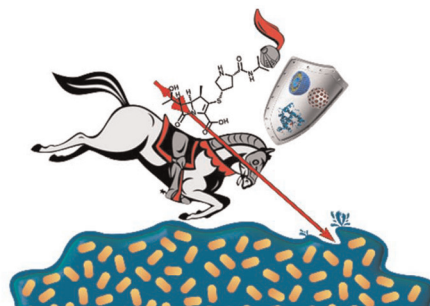
**Join
in** | Publish with us
rsc.li/EESolar

REVIEWS

622

Approaches to enhance the antimicrobial activity of carbapenems within bacterial biofilms

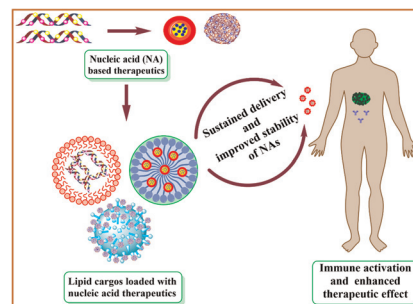
Matthew A. Lamb, Sandra Wiedbrauk and Kathryn E. Fairfull-Smith*



645

Recent progress on nanosystems for nucleic acid delivery

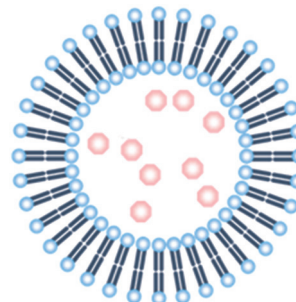
Shanka Walia and Mohit J. Mehta*



675

A brief overview of quality by design approach for developing pharmaceutical liposomes as nano-sized parenteral drug delivery systems

Prachi Atre* and Syed A. A. Rizvi*

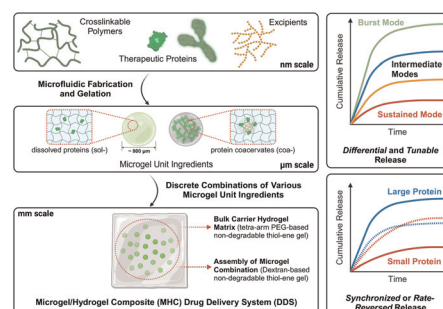


PAPERS

689

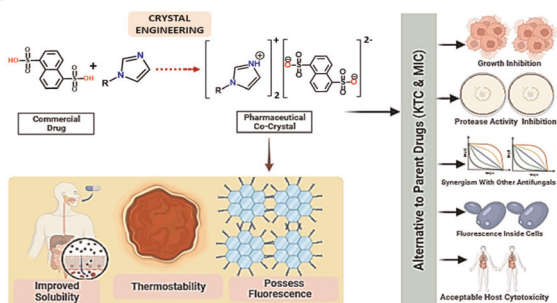
Programmable protein delivery from microgel/hydrogel composites (MHCs) via discrete combinations of multi-state protein-loaded unit ingredients

Longfei Chen and Saif A. Khan*



PAPERS

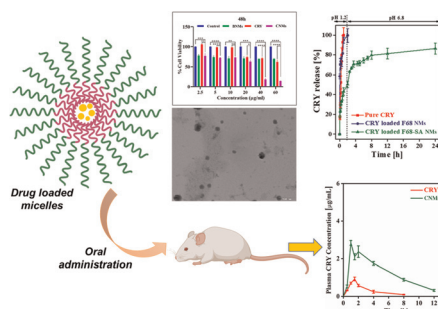
705



Pharmaceutical salts of azole anti-fungal drugs: physicochemical behaviour and activity studies

Hafsa Qadri, Asif A. Malik, Aadil A. Ahangar, Manzoor Ahmad Mir,* Ajjaz A. Dar* and Abdul Haseeb Shah*

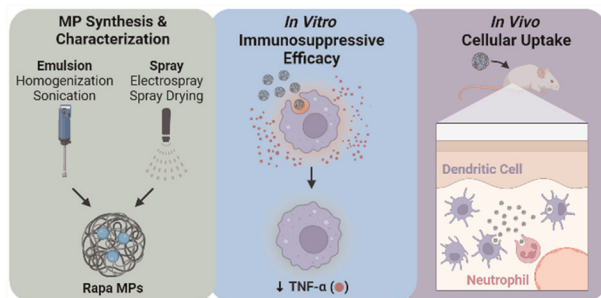
716



Effect of amorphous chrysin loading in hydrophobically modified Pluronic F68 nanomicelles on its anticancer activity, stability and oral bioavailability

Harihar Narayan, Ashok Kumar Jangid, Jiten R. Sharma, Ankita Kishore, Alok Kumar Mahor, Umesh C. S. Yadav, Hitesh Kulhari* and Prem Prakash Singh*

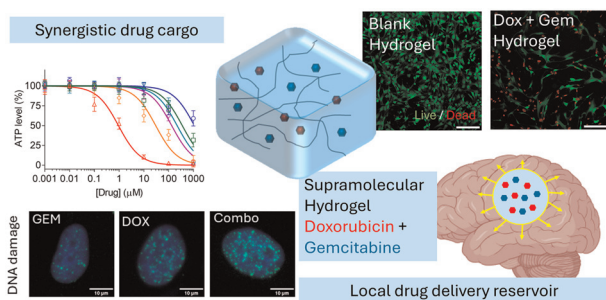
727



Comparison of emulsion and spray methods for fabrication of rapamycin-loaded acetalated dextran microparticles

Stephen A. Ehrenzeller, Nicole Rose Lukesh, Rebeca T. Stiepel, Denzel D. Middleton, Steven M. Nuzzolo, Aliyah J. Tate, Cole J. Batty, Eric M. Bachelder and Kristy M. Ainslie*

742



Supramolecular hydrogels enable co-delivery of chemotherapeutics with synergistic efficacy against patient-derived glioblastoma cells and spheroids

Robert J. Cavanagh,* Saif Baquain, Cameron Alexander, Oren A. Scherman and Ruman Rahman*

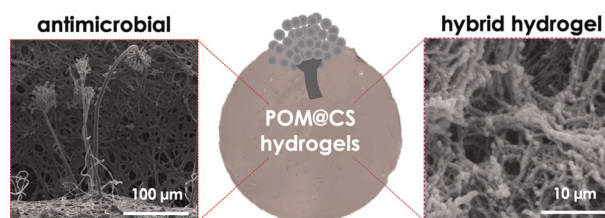


PAPERS

755

Acid- and base-resistant antimicrobial hydrogels based on polyoxometalates and chitosan

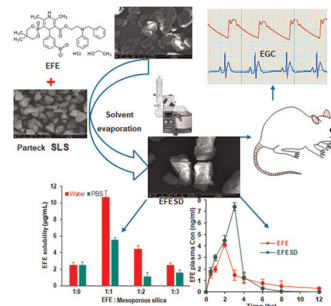
Callum McWilliams, Isabel Franco-Castillo, Andrés Seral Ascaso, Sonia García-Embid, Mariella Malefioudaki, Johann G. Meier, Rafael Martín-Rapún and Scott G. Mitchell*



765

Biopharmaceutical advancement of efonidipine hydrochloride ethanolate through amorphous solid dispersion of a Parteck SLC mesoporous silica polymer

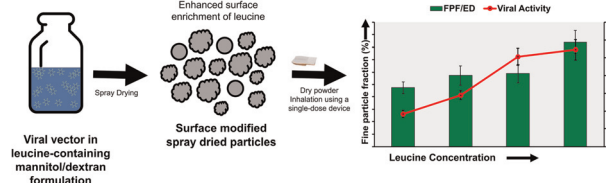
Swati Bharati, Vinod Gaikwad and Bothiraja Chellampillai*



775

Effect of leucine as an aerosolization enhancer on the bioactivity of spray dried viral-vectored vaccines for inhalation

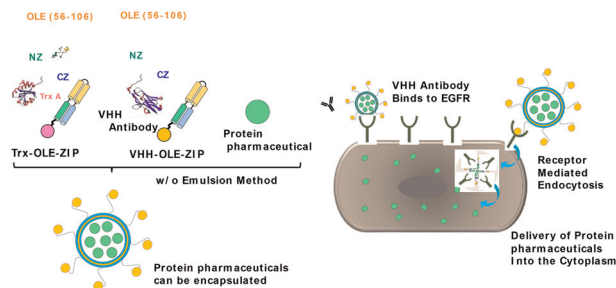
Varsha Singh, Myrna Dolovich, Zhou Xing, Emily D. Cranston and Michael R. Thompson*



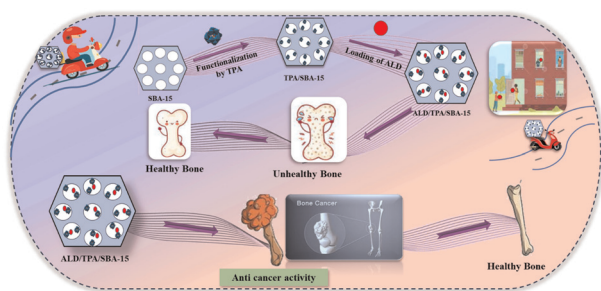
786

Target-selective cytosolic delivery of cargo proteins using the VHH-presented OLE-ZIP capsules

Kousuke Takahashi, Yasumichi Inoue, Shigeaki Hida, Ryuki Hosoda, Naoki Umezawa, Isamu Akiba, Mitsuo Umetsu and Toshihisa Mizuno*



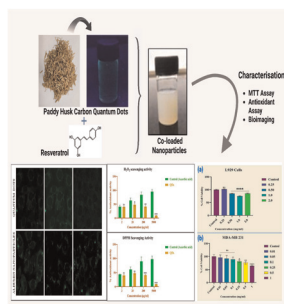
797



Functionalized SBA-15: engineering, detailed study on release and kinetics of alendronate as well as its anti-tumour properties towards osteosarcoma

Anjali Patel* and Shivangi Mehta

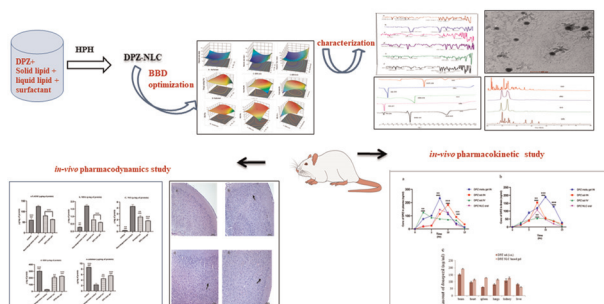
806



Dual-purpose resveratrol-quantum dots loaded albumin nanoparticles

Deepankar Yadav, Priyanka Chaudhary, Priya Singh, Monu Gupta and Shubhini A. Saraf*

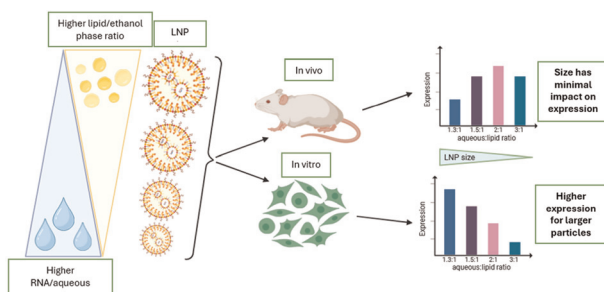
820



Nose to brain targeting of the donepezil nanostructured lipid carrier *in situ* gel: formulation, *in vitro*, *ex vivo*, *in vivo* pharmacokinetic and pharmacodynamic characterization

Devika Sonawane and Varsha Pokharkar*

841



Tailoring lipid nanoparticle dimensions through manufacturing processes

Caitlin McMillan, Amy Druschitz, Stephen Rumbelow, Ankita Borah, Burcu Binici, Zahra Rattray and Yvonne Perrie*



CORRECTION

854

Correction: Pharmaceutical salts of azole anti-fungal drugs: physicochemical behaviour and activity studies

Hafsa Qadri, Asif A. Malik, Aadil A. Ahangar, Manzoor Ahmad Mir,* Aijaz A. Dar* and Abdul Haseeb Shah*

