

## IN THIS ISSUE

eISSN 2976-8713 CODEN RPSHBW 2(3) 429–658 (2025)



### Cover

See Steve P. Rannard *et al.*, pp. 517–526.

Image reproduced by permission of Steve P. Rannard from *RSC Pharm.*, 2025, 2, 517.

## REVIEWS

437

### AI-driven innovations in pharmaceuticals: optimizing drug discovery and industry operations

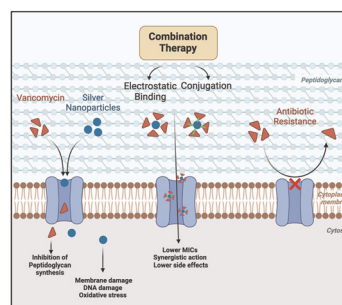
Jaskaran Preet Singh Saini, Ankita Thakur and Deepak Yadav\*



455

### Strategies to overcome antibiotic resistance: silver nanoparticles and vancomycin in pathogen eradication

Sakshi V. Khairnar, Ashish Das, David Oupický, Marat Sadykov and Svetlana Romanova\*



GOLD  
OPEN  
ACCESS

# RSC Advances

At the heart of open access for  
the global chemistry community

Society owned. Society focused

[rsc.li/rsc-advances](https://rsc.li/rsc-advances)

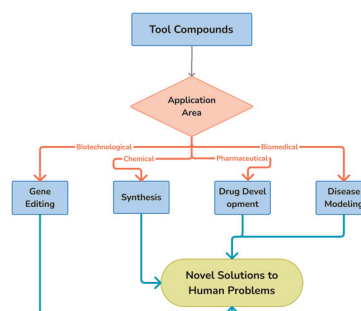
Fundamental questions  
Elemental answers

## REVIEWS

480

### Comprehensive report on biochemical, pharmacological, and pharmacokinetic properties of tool compounds relevant to human pathologies

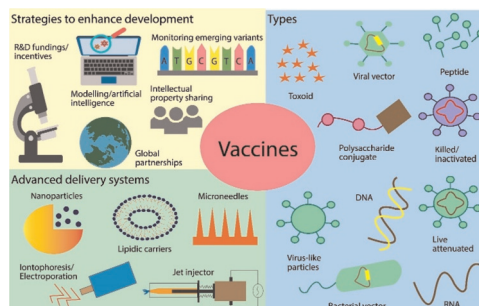
Tikam Chand Dakal, Joice K. Joseph, Deepika, Pawan Kumar Maurya, Narendra Kumar Sharma and Senthilkumar Rajagopal\*



490

### Vaccine formulation design: challenges and opportunities

Saman Zafar, Ambreen Akhtar, Elshaimaa Sayed, Ekhoerose Onaiwu, Muhammad Sohail Arshad\* and Zeeshan Ahmad\*

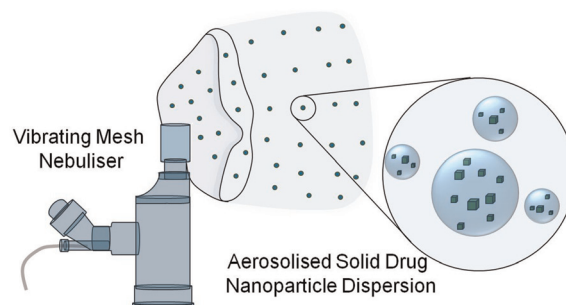


## COMMUNICATIONS

517

### Development of solid drug nanoparticle dispersions for pulmonary delivery of niclosamide and nitazoxanide via vibrating mesh nebulisation

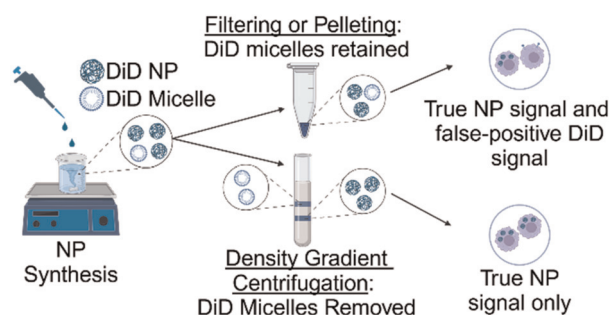
Catherine Unsworth, Andrew B. Dwyer, Alison C. Savage, James J. Hobson, Jonathan Massam, Tom O. McDonald, Paul Curley, Andrew Owen, Andrew O'Sullivan, Ronan MacLoughlin and Steve P. Rannard\*



527

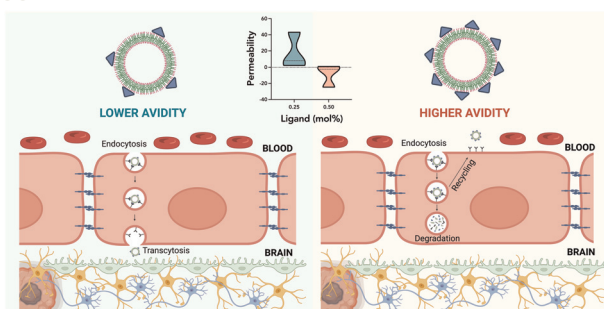
### Standard purification methods are not sufficient to remove micellar lipophilic dye from polymer nanoparticle solution

Eric H. Sterin, Laura A. Weinstein, Chitran Roy Chowdhury, Emma C. Guzzetti and Emily S. Day\*



## COMMUNICATIONS

535

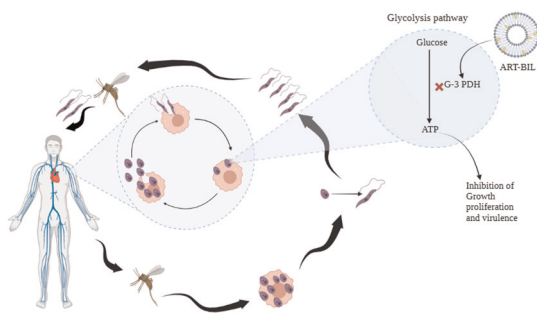


### Sometimes less is more: avidity-dependent transport of targeted polymersomes across the blood–brain-barrier

Ana Alves, Peter Pfeifer, Andreia Marinho, Cláudia Nunes, Salette Reis, Domingos Ferreira, Marta Correia-da-Silva, Paulo C. Costa, Giuseppe Battaglia, Íris L. Batalha\* and Cátia D. F. Lopes\*

## PAPERS

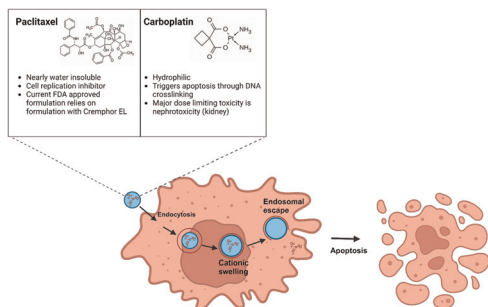
541



### Artesunate-loaded bilosomes with enhanced oral bioavailability: *in silico* and *in vitro* study against *Leishmania donovani* promastigotes and *in vivo* pharmacokinetic assessment in rats

Hitesh Wankhede, Sudha Madhavi Penumaka, Debabrata Mandal, Supada Rojatkhar, Vinod Gaikwad and Sharvil Patil\*

553



### Polybasic nanogels for intracellular co-delivery of paclitaxel and carboplatin: a novel approach to ovarian cancer therapy

Angela M. Wagner, Olivia L. Lanier,\* Ani Savk and Nicholas A. Peppas\*

570



### Polysaccharide-capped silver nanoparticles impregnated cream for the efficient management of wound healing

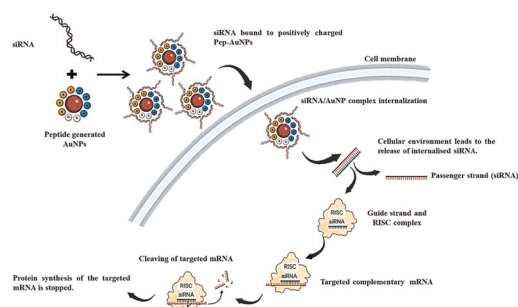
H. P. Syama, B. S. Unnikrishnan, J. Sreekutty, M. G. Archana, G. U. Preethi, P. L. Reshma and T. T. Sreelekha\*



581

## Peptide-derived gold nanoparticles as a promising delivery system for Src targeting siRNA in breast cancer cells

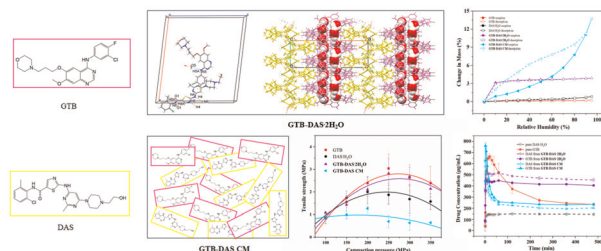
Uday Suryakanta, Bijayananda Panigrahi, Sumana Pal, Swatilekha Das, Soumyadeep Biswas and Dindyal Mandal\*



598

## Comparative evaluation of cocrystalline and coamorphous forms comprised of gefitinib and dasatinib for performance optimization

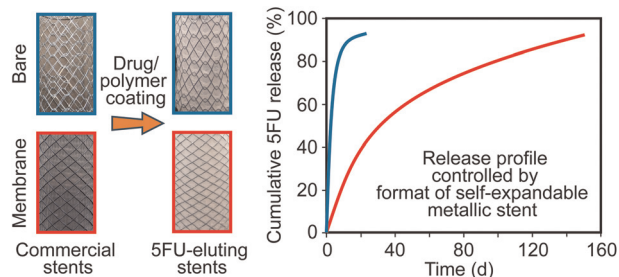
Xian-Bi Shi, Zhi-Qing Wang, Hui-Tian Li, Xia-Lin Dai, Xiang-Tian Long,\* Yong-Liang Huang, Jia-Mei Chen\* and Tong-Bu Lu



611

## Comparison of polymer-coated, drug-eluting self-expandable metal stents for the potential treatment of gastrointestinal cancers

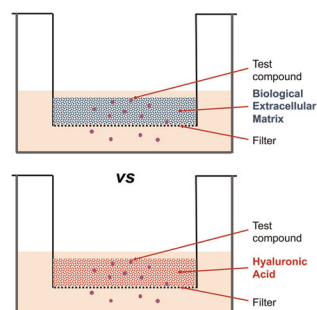
Mohammad Arafat, Anthony Wignall, Kyle Brewer, Yunmei Song, Hugo Albrecht, Clive A. Prestidge, Sanjay Garg\* and Anton Blencowe\*



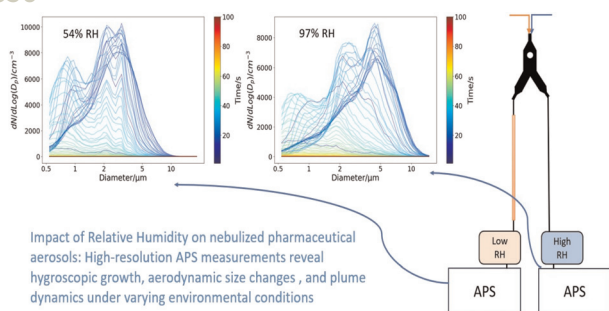
624

## Comparison of macromolecule permeation through extracellular matrix and hyaluronic acid to inform *in vitro* testing of subcutaneous therapies

Jana Javorovic, Belal I. Hanafy, Frans Franek and Driton Vllasaliu\*



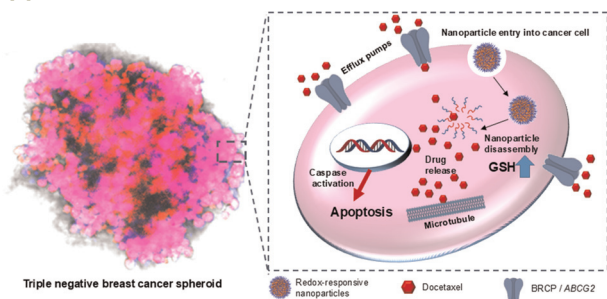
630



### Comparative hygroscopic aerosol particle sizing measurements of the hygroscopic growth of inhaled pharmaceutical ingredients

Yiliang Lance Jiang, Josef Kadziola, Jose R. Ruiz, Richard Friend and Jonathan P. Reid\*

644



### Redox-responsive micellar-like nanoparticles can overcome intrinsic multi-drug resistance in tumour spheroids of triple negative breast cancer

Cintia J. Monteiro, Patrícia F. Monteiro,\*  
Alessandra Travanut, Muhammad Gulfam,  
David M. Heery, Anna Grabowska and  
Cameron Alexander\*

