

IN THIS ISSUE

ISSN 0003-2654 CODEN ANALAO 148(11) 2405–2646 (2023)



Cover

See Eliana Gianolio,
Nunzia Iaccarino *et al.*,
pp. 2415–2424.

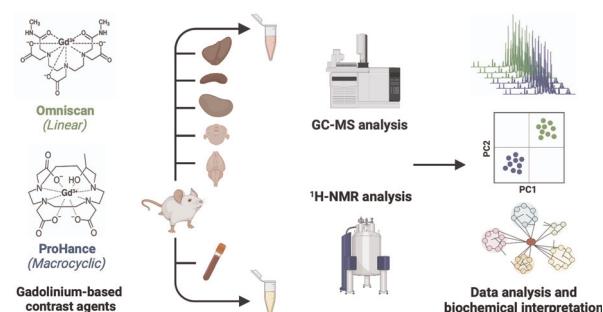
Image reproduced
by permission of
Antonio Randazzo
from *Analyst*,
2023, **148**, 2415.

PAPERS

2415

Comparison of the biological effects of gadodiamide (Omniscan) and gadoteridol (ProHance) by means of multi-organ and plasma metabolomics

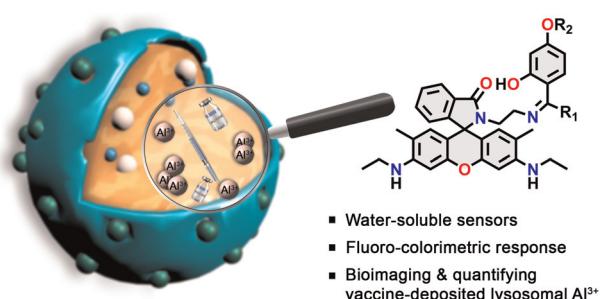
Francesca Romano, Enza Di Gregorio,
Gelsomina Riccardi, Chiara Furlan, Nicola Cavallini,
Francesco Savorani, Anna Di Porzio, Stefano De Tito,
Antonio Randazzo, Eliana Gianolio* and
Nunzia Iaccarino*



2425

Trivalent metal ion sensor enabled bioimaging and quantification of vaccine-deposited Al^{3+} in lysosomes

Kavyashree P., Ajmal Roshan Unniram Parambil,
Akshay Silswal, Anup Pramanik and Apurba Lal Koner*



Editorial Staff**Executive Editor**

Philippa Ross

Deputy Editor

Alice Smallwood

Editorial Production Manager

Jason Woolford

Development Editor

Celeste Brady

Publishing EditorsGabriel Clarke, Derya Kara-Fisher,
Emma Stephen, Ziva Whitelock**Publishing Assistant**

Andrea Whiteside

Editorial Assistant

Leo Curtis

Publisher

Jeanne Andres

For queries about submitted articles please contact
Jason Woolford, Editorial production manager, in the first
instance. E-mail analyst@rsc.org

For pre-submission queries please contact
Philippa Ross, Executive editor.
E-mail analyst-rsc@rsc.org

Analyst (electronic: ISSN 1364-5528) is published
24 times a year by the Royal Society of Chemistry,
Thomas Graham House, Science Park, Milton Road,
Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of
Chemistry, should be sent to the Royal Society of Chemistry
Order Department, Royal Society of Chemistry,
Thomas Graham House, Science Park, Milton Road,
Cambridge, CB4 0WF, UK
Tel +44 (0)1223 432398; E-mail orders@rsc.org

2023 Annual (electronic) subscription price: £2372; US\$4152.
Customers in Canada will be subject to a surcharge to cover
GST. Customers in the EU subscribing to the electronic version
only will be charged VAT.

If you take an institutional subscription to any Royal Society of
Chemistry journal you are entitled to free, site-wide web access
to that journal. You can arrange access via Internet Protocol
(IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling
payable on a UK clearing bank or in US dollars payable
on a US clearing bank.

Whilst this material has been produced with all due care, the
Royal Society of Chemistry cannot be held responsible or liable
for its accuracy and completeness, nor for any consequences
arising from any errors or the use of the information contained
in this publication. The publication of advertisements does not
constitute any endorsement by the Royal Society of Chemistry
or Authors of any products advertised. The views and opinions
advanced by contributors do not necessarily reflect those of
the Royal Society of Chemistry which shall not be liable for
any resulting loss or damage arising as a result of reliance
upon this material. The Royal Society of Chemistry is a charity,
registered in England and Wales, Number 207890, and a
company incorporated in England by Royal Charter (Registered
No. RC000524), registered office:
Burlington House, Piccadilly, London W1J 0BA, UK,
Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017;
E-mail advertising@rsc.org

For marketing opportunities relating to this journal,
contact marketing@rsc.org

Analyst

rsc.li/analyst

The home of premier fundamental discoveries, inventions and applications in the analytical
and bioanalytical sciences

Editorial Board

Editor-in-Chief

Norman Dovichi, University of Notre Dame, USA

Karen Faulds, University of Strathclyde, UK
Hideaki Hisamoto, Osaka Metropolitan University, Japan

Hua-Zhong Yu, Simon Fraser University, Canada

Jun-Jie Zhu, Nanjing University, China

Associate Editors

Damien Arrigan, Curtin University, Australia

Baohong Liu, Fudan University, China

Ryan Bailey, University of Michigan, USA

Nicole Pamme, Stockholm University, Sweden

Jaebum Choo, Chung-Ang University, South Korea

Members

Susan Lunte, University of Kansas, USA

Advisory Board

Matthew Baker, University of Central Lancashire, UK

Robert T Kennedy, University of Michigan, USA

of Technology Kanpur, India
Howbeer Muhamadali, University of Liverpool, UK

Paul W Bohn, University of Notre Dame, USA

Kagan Kerman, University of Toronto, Canada

Takeaki Ozawa, University of Tokyo, Japan

Claudia Conti, CNR, Italy

Christine Kranz, Ulm University, Germany

Ashley Ross, University of Cincinnati, USA
Muhammad Shiddiky, Griffith University, Australia

R Graham Cooks, Purdue University, USA

Annamalai Senthil Kumar, Vellore Institute of

Jeffrey Dick, The University of North Carolina at Chapel Hill, USA

Technology University, India

Volker K. Deckert, University of Jena, Germany

Xiujuan Li, University of Texas at El Paso, USA

Debbie Silvester, Curtin University, Australia

Joshua Edel, Imperial College London, UK

Lanqun Mao, Institute of Chemistry, Chinese Academy of Sciences, China

Steven A. Soper, University of Kansas, USA

Qun Fang, Zhejiang University, China

Maria Marín, University of East Anglia, UK

Dana Spence, Michigan State University, USA

Facundo Fernandez, Georgia Institute of Technology, USA

Pavel Matousek, Rutherford Appleton Laboratory, UK

Nick Stone, University of Exeter, UK

Roy Goodacre, University of Liverpool, UK

Wei Min, Columbia University, USA

Evan Williams, University of California, USA

Duncan Graham, University of Strathclyde, UK

Boris Mizraikoff, University of Ulm, Germany

Chaoyong James Yang, Xiamen University, China

Prakash Chandra Mondal, Indian Institute

Yilun Ying, Nanjing University, China

Information for Authors

Full details on how to submit material for publication in Analyst are given in the Instructions for Authors (available from <http://www.rsc.org/authors>). Submissions should be made via the journal's homepage: rsc.li/analyst

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of the Royal Society of Chemistry.

This journal is © The Royal Society of Chemistry 2023.

Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted

under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

Registered charity number: 207890

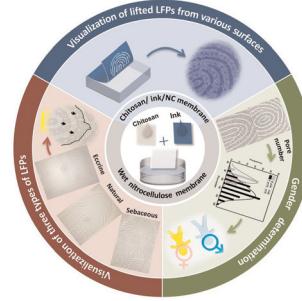


PAPERS

2438

Wet nitrocellulose membrane for the level 3 feature visualization of various latent fingerprints and gender determination

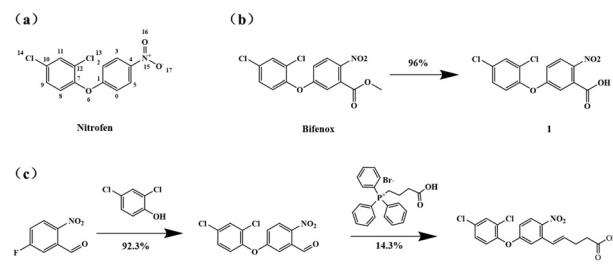
Lu Tian, Hongyu Chen, Xiangyu Sun, Lu Liu and Meiqin Zhang*



2449

Hapten synthesis and a colloidal gold immunochromatographic strip assay to detect nitrofen and bifenoxy in fruits

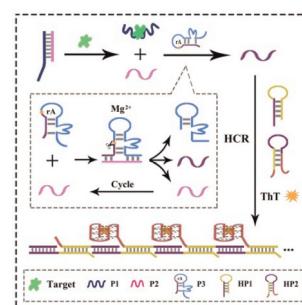
Peng Wang, Xinxin Xu, Lingling Guo, Liqiang Liu, Hua Kuang, Jing Xiao* and Chuanlai Xu*



2459

Self-constrained DNAzyme for aptamer-based and sensitive label-free fluorescent assay of sarafoxacin via signal amplification cascades

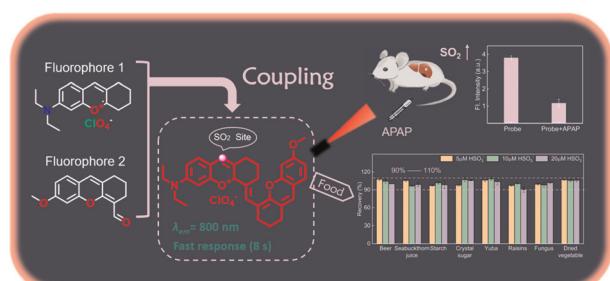
Qianying Wang, Junyi Zhang, Ruo Yuan and Yun Xiang*



2465

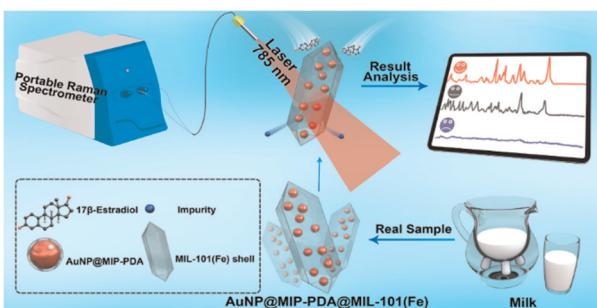
A near-infrared fluorescent probe for *in situ* imaging of SO₂ flux in drug-induced liver injury

Xingwei Li, Huming Yan, Fangjun Huo,* Yongbin Zhang, Le Zhang, Haixian Ren and Caixia Yin*



PAPERS

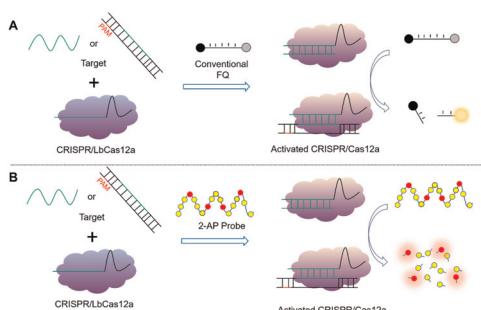
2472



Fabrication of molecularly-imprinted gold nanoparticle-embedded Fe-MOFs for highly selective SERS detection of 17 β -estradiol in milk

Mengmeng Zhang, Zhouya Wu, Yunhan Yang, Jing Ye, Sheng Han* and Yuanting Li*

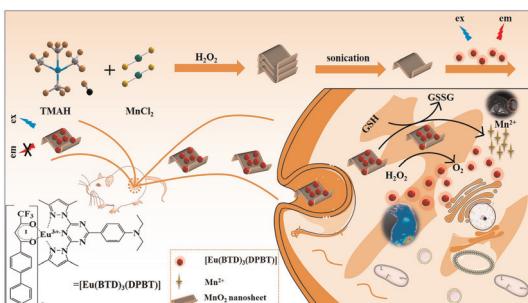
2482



Sensing platform for nucleic-acid detection based on a 2-aminopurine probe sheared by trans-cleavage activity of the CRISPR/Cas12a system

Xiaolong Chen, Chaowang Huang, Qiao Hu, Jing Zhang, Dan Wang, Qianyi You and Mingdong Hu*

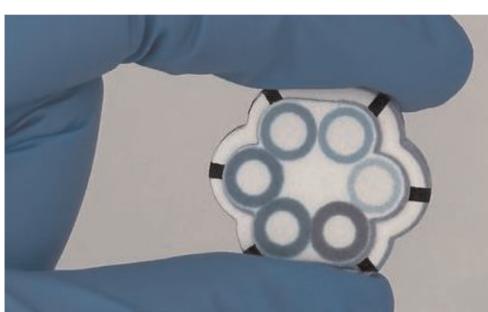
2493



An activatable nanoprobe based on nanocomposites of visible-light-excitible europium(III) complex-anchored MnO₂ nanosheets for bimodal time-gated luminescence and magnetic resonance imaging of tumor cells

Bo Song,* Huinan Yan, Jiao Jiang, Jin Yu, Shengjun Huang and Jingli Yuan*

2501



All-electrical antibiotic susceptibility and resistance profiling of electrogenic *Pseudomonas aeruginosa*

Zahra Rafiee and Seokheun Choi*

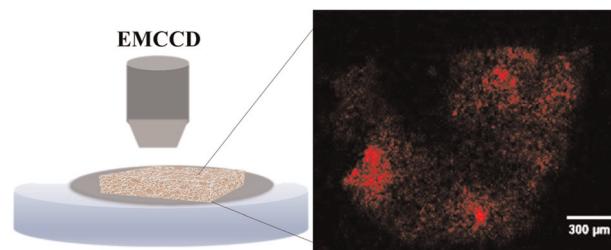


PAPERS

2511

Electrochemiluminescence imaging of a membrane carcinoembryonic antigen at single tissue sections

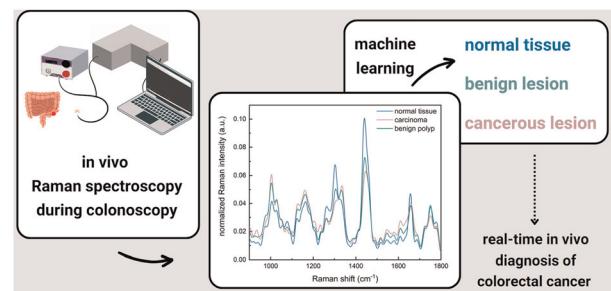
Junwei Shi, Dongni Han, Zengyu Feng, Dechen Jiang and Depeng Jiang*



2518

***In vivo* Raman spectroscopy in the diagnostics of colon cancer**

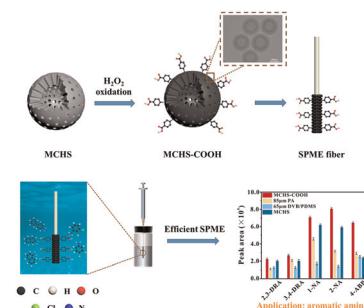
Markéta Fousková,* Jan Vališ, Alla Synytsya, Lucie Habartová, Jaromír Petrýl, Luboš Petruželka and Vladimír Setnička



2527

Carboxylated mesoporous carbon hollow spheres for the efficient solid-phase microextraction of aromatic amines

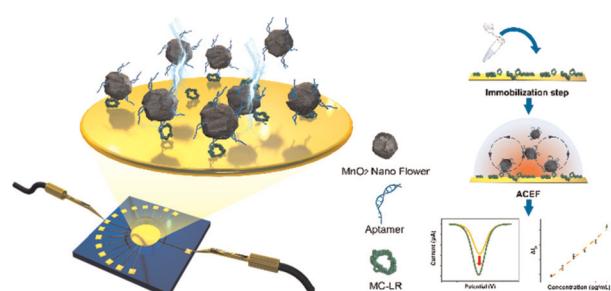
Shixiang Chen, Zejun Yu, Wenmin Zhang, Hui Chen, Qingqing Ding, Jinhua Xu, Qidong Yu and Lan Zhang*



2536

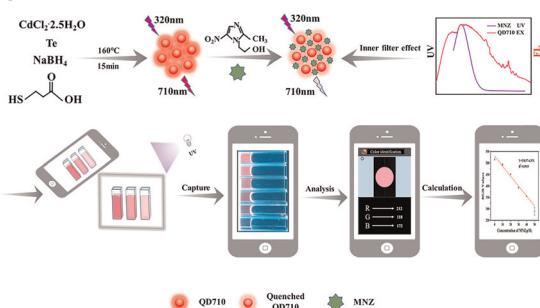
Construction of a rapid electrochemical biosensor consisting of a nanzyme/aptamer conjugate for waterborne microcystin detection

Jeong Ah Park, Yein Kwon, Xuan Ai Le, Trung Hieu Vu, Hanbin Park, Hoseok Lee, Hye Kyu Choi, Chulhwan Park, Moon Il Kim* and Taek Lee*



PAPERS

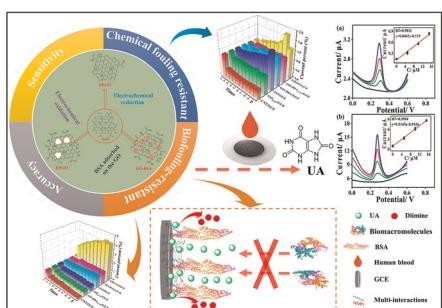
2544



Inner filter effect-based near-infrared fluorescent probe for detection of metronidazole on a smartphone-integrated analytical platform

Shaojie Wang, Yongbo Wang,* Yuanna Ning and Qiming Liu

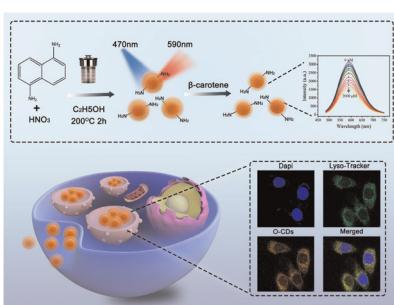
2553



Tunable graphene oxide for the low-fouling electrochemical sensing of uric acid in human serum

Gang Li, Chunying Xu,* Hui Xu, Liju Gan, Kai Sun and Baiqing Yuan*

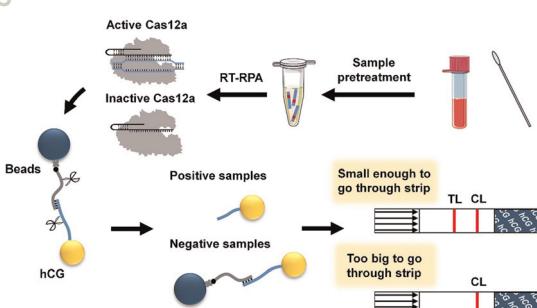
2564



Nitrogen-doped orange emitting carbon dots for β -carotene detection and lysosomal imaging

Xinlu Li, Tongtong Zhu, Yuwei Du, Haiyang Yan, Ruhong Yan,* Wen-Fei Dong* and Li Li*

2573



CRISPR Cas12a-enabled biosensors coupled with commercial pregnancy test strips for the visible point-of-care testing of SARS-CoV-2

Peijie Shen, Zhenjun Si, Di Huang, Zhipeng Xu,* Ziyi Wang, Mengjun Fang and Zhenan Xu*

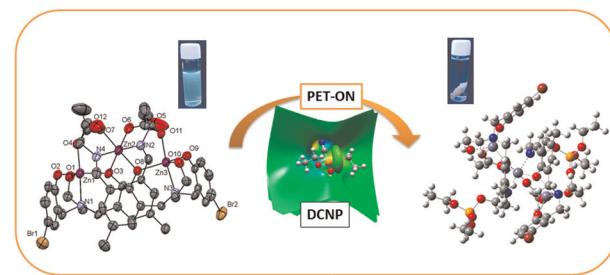


PAPERS

2582

Synthesis of a trinuclear zinc(II) cluster composed of [4.4.3.0^{1,5}]tridecane cages: a rapid detection and degradation probe for the chemical warfare agent simulant diethyl cyanophosphonate in protein-rich food products

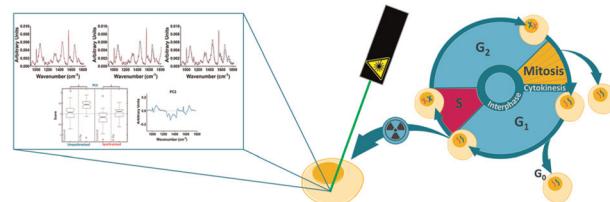
Sahil Thakur, Jyoti Rohilla, Keshav Kumar, Harender Kumar, Raghbir Singh,* Varinder Kaur,* Raman Kamboj and Ravneet Kaur



2594

Understanding radiation response and cell cycle variation in brain tumour cells using Raman spectroscopy

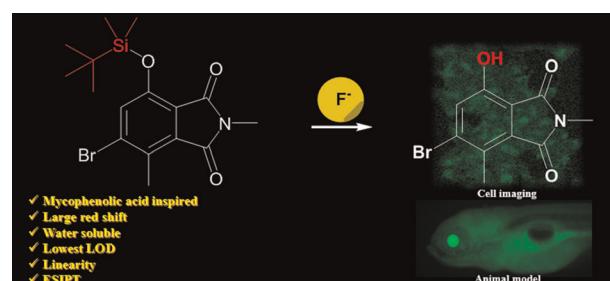
Iona E. Hill, Marie Boyd, Kirsty Milligan, Cerys A. Jenkins, Annette Sorensen, Andrew Jirasek, Duncan Graham and Karen Faulds*



2609

"Lighting up" fluoride: cellular imaging and zebrafish model interrogations using a simple ESIPT-based mycophenolic acid precursor-based probe

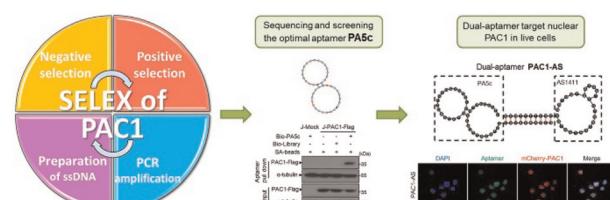
Neha Jain, Prasad M. Sonawane, Haoyan Liu, Arkaprava Roychaudhury, Youngseob Lee, Jongkeol An, Donghyeon Kim, Dongwook Kim, Yunsu Kim, Yeu-Chun Kim, Kyung-Bin Cho, Hee-Sung Park, Cheol-Hee Kim* and David G. Churchill*



2616

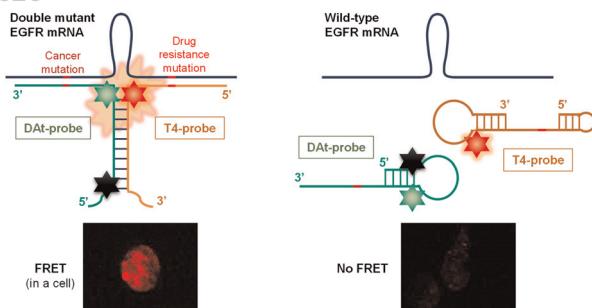
Development of a modularized aptamer targeting the nuclear T-cell suppressor PAC1

Zixi Hu, Zhongyu Jiang, Zeliang Yang, Liang Liu, Zhenyu Zhu, Yan Jin and Yuxin Yin*



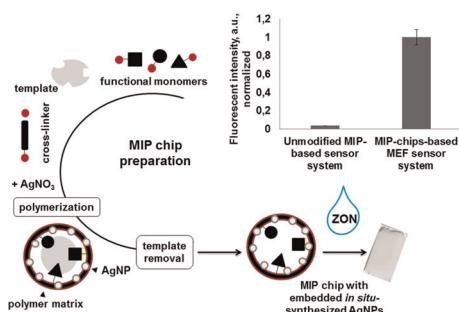
PAPERS

2626

FRET probe for detecting two mutations in one *EGFR* mRNA

Myat Thu, Kouta Yanai, Hajime Shigeto, Shohei Yamamura, Kazunori Watanabe and Takashi Ohtsuki*

2633



An enhanced fluorescent sensor system based on molecularly imprinted polymer chips with silver nanoparticles for highly-sensitive zearalenone analysis

Daria Yarynka,* Volodymyr Chegel, Elena Piletska, Sergey Piletsky, Larysa Dubey, Igor Dubey, Roman Nikolaiev, Oleksandr Brovko and Tetyana Sergeyeva

