

Contents

Leading article

- Rapid whole-genome sequencing of bacterial pathogens in the clinical microbiology laboratory—pipe dream or reality? **2307**
M.E. Török and S.J. Peacock

Reviews

- Update on the *in vivo* tolerance and *in vitro* reduced susceptibility to the antimalarial lumefantrine **2309**
Alexis Nzila, John Okombo, Eric Ohuma and Assad Al-Thukair
- Principles of multilevel analysis and its relevance to studies of antimicrobial resistance **2316**
Akke Vellinga, Kathleen Bennett, Andrew W. Murphy and Martin Cormican

Original research

- HIV-1 genome is often defective in PBMCs and rectal tissues after long-term HAART as a result of APOBEC3 editing and correlates with the size of reservoirs **2323**
Slim Fourati, Sidonie Lambert-Niclot, Cathia Soulie, Isabelle Malet, Marc Antoine Valantin, Benjamin Descours, Zaina Ait-Arkoub, Benoit Mory, Guislaine Carcelain, Christine Katlama, Vincent Calvez and Anne Geneviève Marcelin
- Replication capacity of minority variants in viral populations can affect the assessment of resistance in HCV chimeric replicon phenotyping assays **2327**
Thierry Verbinen, Tom Jacobs, Leen Vijgen, Hugo Ceulemans, Johan Neyts, Gregory Fanning and Oliver Lenz
- Development of a real-time quadruplex PCR assay for simultaneous detection of *nuc*, Pantone–Valentine leucocidin (PVL), *mecA* and homologue *mecA*_{LGA251} **2338**
Bruno Pichon, Robert Hill, Frederic Laurent, Anders Rhod Larsen, Robert L. Skov, Mark Holmes, Giles F. Edwards, Christopher Teale and Angela M. Kearns
- Unusual small plasmids carrying the novel resistance genes *dfkR* or *apmA* isolated from methicillin-resistant or -susceptible staphylococci **2342**
Kristina Kadlec, Andrea T. Feßler, Natacha Couto, Constança F. Pomba and Stefan Schwarz
- Reduced vancomycin susceptibility and staphylococcal cassette chromosome *mec* (SCC*mec*) type distribution in methicillin-resistant *Staphylococcus aureus* bacteraemia **2346**
Jennifer H. Han, Paul H. Edelstein and Ebbing Lautenbach
- Prevalence and characteristics of β -lactamase and plasmid-mediated quinolone resistance genes in *Escherichia coli* isolated from farmed fish in China **2350**
Hong-Xia Jiang, Dian Tang, Ya-Hong Liu, Xiao-Hua Zhang, Zhen-Ling Zeng, Li Xu and Peter M. Hawkey
- Complete nucleotide sequence of the multidrug resistance IncA/C plasmid pR55 from *Klebsiella pneumoniae* isolated in 1969 **2354**
Benoît Doublet, David Boyd, Gregory Douard, Karine Praud, Axel Cloeckert and Michael R. Mulvey
- Co-production of SFO-1 and DHA-1 β -lactamases and 16S rRNA methylase ArmA in clinical isolates of *Klebsiella pneumoniae* **2361**
Qinglan Guo, Peng Wang, Ying Ma, Yang Yang, Xinyu Ye and Minggui Wang



- Inter-hospital outbreak of *Klebsiella pneumoniae* producing KPC-2 carbapenemase in Ireland **2367**
 Dearbháile Morris, Fiona Boyle, Carol Morris, Iris Condon, Anne-Sophie Delannoy-Vieillard, Lorraine Power, Aliya Khan, Margaret Morris-Downes, Cathriona Finnegan, James Powell, Regina Monahan, Karen Burns, Nuala O'Connell, Liz Boyle, Alan O'Gorman, Hilary Humphreys, Sylvain Brisse, Jane Turton, Neil Woodford and Martin Cormican
- Combination of paromomycin and miltefosine promotes TLR4-dependent induction of antileishmanial immune response *in vitro* **2373**
 Sushmita Das, Mukta Rani, Krishna Pandey, Ganesh Chandra Sahoo, Vidya Nand Rabidas, Dharmendra Singh and Pradeep Das
- Novel fragments of clavulanate observed in the structure of the class A β -lactamase from *Bacillus licheniformis* BS3 **2379**
 Pablo Power, Paola Mercuri, Raphaël Herman, Frédéric Kerff, Gabriel Gutkind, Georges Dive, Moreno Galleni, Paulette Charlier and Eric Sauvage
- Reversible monensin adaptation in *Enterococcus faecium*, *Enterococcus faecalis* and *Clostridium perfringens* of cattle origin: potential impact on human food safety **2388**
 Shabbir Simjee, Anna-Leigh Heffron, Andrew Pridmore and Thomas R. Shryock
- Antibacterial activity and cytotoxicity analysis of halistanol trisulphate from marine sponge *Petromica citrina* **2396**
 Palloma R. Marinho, Naomi Kato Simas, Ricardo Machado Kuster, Rafael Silva Duarte, Sergio Eduardo Longo Fracalanza, Davis Fernandes Ferreira, Maria Teresa Villela Romanos, Guilherme Muricy, Marcia Giambiagi-DeMarval and Marinella Silva Laport
- Capsaicin, a novel inhibitor of the NorA efflux pump, reduces the intracellular invasion of *Staphylococcus aureus* **2401**
 Nitin Pal Kalia, Priya Mahajan, Rukmankesh Mehra, Amit Nargotra, Jai Parkash Sharma, Surrinder Koul and Inshad Ali Khan
- Loss of or inhibition of all multidrug resistance efflux pumps of *Salmonella enterica* serovar Typhimurium results in impaired ability to form a biofilm **2409**
 Stephanie Baugh, Aruna S. Ekanayaka, Laura J. V. Piddock and Mark A. Webber
- Voriconazole inhibits biofilm formation in different species of the genus *Candida* **2418**
 A. Valentín, E. Cantón, J. Pemán and J. P. Martínez
- Mecillinam/clavulanate combination: a possible option for the treatment of community-acquired uncomplicated urinary tract infections caused by extended-spectrum β -lactamase-producing *Escherichia coli* **2424**
 Niki Lampri, Irene Galani, Garyphallia Poulakou, Ioannis Katsarolis, George Petrikos, Helen Giamarellou and Maria Souli
- Standardized broth microdilution antimicrobial susceptibility testing of *Francisella tularensis* subsp. *holarctica* strains from Europe and rare *Francisella* species **2429**
 Enrico Georgi, Erik Schacht, Holger C. Scholz and Wolf D. Splettstoesser
- Effectiveness of a short (4 day) course of oritavancin in the treatment of simulated *Clostridium difficile* infection using a human gut model **2434**
 C. H. Chilton, J. Freeman, G. S. Crowther, S. L. Todhunter and M. H. Wilcox
- Impact of low-level fluoroquinolone resistance genes *qnrA1*, *qnrB19* and *qnrS1* on ciprofloxacin treatment of isogenic *Escherichia coli* strains in a murine urinary tract infection model **2438**
 Lotte Jakobsen, Vincent Cattoir, Klaus S. Jensen, Anette M. Hammerum, Patrice Nordmann and Niels Frimodt-Møller
- Oncocin derivative Onc72 is highly active against *Escherichia coli* in a systemic septicaemia infection mouse model **2445**
 Daniel Knappe, Stefanie Fritsche, Gottfried Alber, Gabriele Köhler, Ralf Hoffmann and Uwe Müller
- Antibacterial efficacy of inhaled squalamine in a rat model of chronic *Pseudomonas aeruginosa* pneumonia **2452**
 Sami Hraiech, Fabienne Brégeon, Jean-Michel Brunel, Jean-Marc Rolain, Hubert Lepidi, Véronique Andrieu, Didier Raoult, Laurent Papazian and Antoine Roch

Colistin pharmacokinetics in intensive care unit patients on continuous venovenous haemodiafiltration: an observational study <i>Nikolaos Markou, Marizoa Fousteri, Sophia L. Markantonis, Basilios Zidianakis, Despina Hroni, Eleni Boutzouka and George Baltopoulos</i>	2459
Intrapulmonary penetration of ceftolozane/tazobactam and piperacillin/tazobactam in healthy adult subjects <i>Gurudatt Chandorkar, Jennifer A. Huntington, Mark H. Gotfried, Keith A. Rodvold and Obiamiwe Umeh</i>	2463
Lopinavir pharmacokinetic profiles in HIV-infected patients during rifabutin-based anti-mycobacterial therapy <i>Alberto Matteelli, Paola Villani, Anna Cristina C. Carvalho, Issa El-Hamad, Maria Cusato, Alessandra Apostoli, Claudio Marcantoni, Alessandra Calabresi, Sarah Dal Zoppo, Sara Bigoni and Mario Regazzi</i>	2470
Immune recovery and T cell subset analysis during effective treatment with maraviroc <i>Francesca Cossarini, Andrea Galli, Laura Galli, Alba Bigoloni, Stefania Salpietro, Concetta Vinci, Liviana Della Torre, Nicola Gianotti, Vincenzo Spagnuolo, Adriano Lazzarin, Antonella Castagna and Silvia Nozza</i>	2474
Simplification to dual antiretroviral therapy including a ritonavir-boosted protease inhibitor in treatment-experienced HIV-1-infected patients <i>Joaquin Burgos, Manuel Crespo, Vicenç Falcó, Adria Curran, Jordi Navarro, Arkaitz Imaz, Pere Domingo, Daniel Podzamczar, M^a Gracia Mateo, Sara Villar, Eva Van den Eynde, Esteve Ribera and Albert Pahissa</i>	2479
Impact of lopinavir/ritonavir use on antiretroviral resistance in recent clinical practice <i>Sidonie Lambert-Niclot, Bernard Masquelier, Isabelle Cohen Codar, Cathia Soulie, Constance Delaugerre, Laurence Morand-Joubert, Charlotte Charpentier, Virginie Ferre, Jean-Christophe Plantier, Brigitte Montes, Sophie Carret, Valerie Perrot, Gilles Peytavin, Dominique Costagliola, Vincent Calvez and Anne-Geneviève Marcelin on behalf of the EOLE Study Group</i>	2487
Risk factors for raltegravir resistance development in clinical practice <i>Isabelle Malet, Slim Fourati, Laurence Morand-Joubert, Philippe Flandre, Marc Wirden, Stéphanie Haim-Boukobza, Sophie Sayon, Theresa Pattery, Anne Simon, Christine Katlama, Pierre-Marie Girard, Vincent Calvez and Anne-Geneviève Marcelin</i>	2494
Quinine interactions with tryptophan and tyrosine in malaria patients, and implications for quinine responses in the clinical setting <i>Farida Islahudin, Richard J. Pleass, Simon V. Avery and Kang-Nee Ting</i>	2501
Adherence to recommendations for the use of antifungal agents in a tertiary care hospital <i>Yasmine Nivoix, Anne Launoy, Philippe Lutun, Jean-Charles Moulin, Katy-Anna Phai Pang, Luc-Matthieu Fornecker, Michèle Wolf, Dominique Levêque, Valérie Letscher-Bru, Laurence Beretz, Geneviève Ubeaud-Sequier and Raoul Herbrecht</i>	2506
Shift in dominant hospital-associated methicillin-resistant <i>Staphylococcus aureus</i> (HA-MRSA) clones over time <i>Gwenan M. Knight, Emma L. Budd, Laura Whitney, Alastair Thornley, Hasan Al-Ghusein, Timothy Planche and Jodi A. Lindsay</i>	2514
Trimethoprim and ciprofloxacin resistance and prescribing in urinary tract infection associated with <i>Escherichia coli</i> : a multilevel model <i>Akke Vellinga, Sana Tansey, Belinda Hanahoe, Kathleen Bennett, Andrew W. Murphy and Martin Cormican</i>	2523
Research letters	
Detection of OXA-231, a new variant of bla _{OXA-143} , in <i>Acinetobacter baumannii</i> from Brazil: a case report <i>Bárbara Gionco, Jacinta S. Pelayo, Emerson J. Venancio, Rodrigo Cayô, Ana C. Gales and Floristher E. Carrara-Marroni</i>	2531
IMP-1-producing carbapenem-resistant <i>Acinetobacter ursingii</i> from Japan <i>Shiro Endo, Mina Sasano, Hisakazu Yano, Shinya Inomata, Noriomi Ishibashi, Tetsuji Aoyagi, Masumitsu Hatta, Yoshiaki Gu, Mitsuhiro Yamada, Koichi Tokuda, Miho Kitagawa, Hiroyuki Kunishima, Yoichi Hirakata and Mitsuo Kaku</i>	2533
<i>Escherichia coli</i> O25b-ST131 is an important cause of antimicrobial-resistant infections in women with uncomplicated cystitis <i>Pak-Leung Ho, Wai U. Lo, Eileen L. Lai, Kin-Hung Chow and Wing-Cheong Yam</i>	2534

Lichenoid drug reaction to antituberculosis drugs treated through with topical steroids and phototherapy
Rannakoe J. Lehloeny, Gail Todd, Lesiba Mogotlane, Nomphele Gantsho, Carol Hlela and Keertan Dheda **2535**

aV Teicoplanin therapy leading to a significant decrease in viral load in a patient with chronic hepatitis C **2537**

aV Long-term maraviroc use as salvage therapy in HIV-2 infection **2538**
Umbelina Caixas, Joana Ferreira, Aline T. Marinho, Inês Faustino, Nádia M. Grilo, Fátima Lampreia, Isabel Germano, Emília C. Monteiro and Sofia A. Pereira

Letters to the Editor

aV Comment on: Residual viraemia does not influence 1 year virological rebound in HIV-infected patients with HIV RNA persistently below 50 copies/mL **2540**
Nathalie Iannotti, Giulia Masini, Claudia Bernardini, Laura Soavi, Giuliana Cologni, Emanuele Malfatto, Simone Benatti and Franco Maggiolo

aV Residual viraemia does not influence 1 year virological rebound in HIV-infected patients with HIV RNA persistently below 50 copies/mL—authors' response **2541**
Nicola Gianotti, Laura Galli, Sara Racca, Stefania Salpietro, Francesca Cossarini, Vincenzo Spagnuolo, Beatrice Barda, Filippo Canducci, Massimo Clementi, Adriano Lazzarin and Antonella Castagna