ANTIMICROBIAL CHEMOTHERAPY VIRTUAL CONFERENCE

2 & 3 February 2022

Jointly organised by the GARDP and BSAC

GARDP
Global Antibiotic Research & Development Partnership

BRITISH SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY

This virtual conference is jointly organised by GARDP and BSAC. For 2022, we are collaborating with the Center For Disease Dynamics, Economics & Policy (CDDEP) and the Indian Council of Medical Research (ICMR).

icmr
INDIAN COUNCIL OF MEDICAL RESEARCH
Serving the nation since 1911

CDDEP CENTER FOR Disease Dynamics, Economics & Policy
WASHINGTON DC • NEW DELHI

PROGRAMME: 2 FEBRUARY

1030 Introductory remarks
Professor Laura JV Piddock, Scientific Director, GARDP

SESSION ONE: KEYNOTE PRESENTATION
Chair: Dr Manica Balasegaram, Executive Director, GARDP

1035
Regulatory challenges and global access to new antibiotics
Dr Ramanan Laxminarayan, Director, CDDEP

1055
Q&A

1105
BREAK

SESSION TWO: EARLY DRUG DISCOVERY: NEW TARGETS AND NEW CHEMISTRY
Chair: Dr Adam Roberts, Liverpool School of Tropical Medicine, UK

1115
Dual fluorescent timer module for screening of anti-persister agents
Professor Ranjana Pathania, Professor Indian Institute of Technology Roorkee (IIT Roorkee)

1130
Discovery and optimization of β-sliding clamp (DnaN) inhibitors
Professor Dr Anna Hirsch, Head of department, Drug Design and Optimization (DDOP) Helmholtz-Institute for Pharmaceutical Research Saarland (HIPS)

1145
New ways to identify novel antibacterial chemical entities - Identification of Novel Antibacterials Using Machine Learning Techniques
Mr Ed Siegwart, Director of Microbiology, Oppilotech Ltd

1200
Q&A

1210
BREAK

SESSION THREE: PRECLINICAL ANTIMICROBIAL DEVELOPMENT
Chair: Dr Taslimarif Sayyed, CEO & Director of C-CAM

1220
WHO Priority pathogen list and WHO preclinical pipeline analysis
Dr Valeria Gigante, Team Lead, One Health Research Priority-setting and Synergy in AMR, WHO

1235
Presentation tbc
Speaker tbc

1250
Overview of CARB-X pipeline
Dr Erin Duffy, Chief of Research & Development, CARB-X

1305
Q&A

1315
BREAK

SESSION FOUR: PANEL DISCUSSION
Chair: Professor Sujith Chandy, Professor, Department of Pharmacology & Clinical Pharmacology Christian Medical College, Vellore

1325
Evidence for the use of old and new antibiotics
Panellists: Dr Susan Hopkins (UKHSA), Dr Priscilla Rupali (Prof Infectious Diseases, Christian Medical College, Vellore), Dr Subasree Srinivasan (Medical Director, GARDP), Prof. Dr Evelina Tacconelli (University of Verona)

1420
Day one closing remarks
Dr Christopher Longshaw, Senior Director, EU Scientific Affairs, Shionogi BV & BSAC Honorary Treasurer

PROGRAMME: 3 FEBRUARY

1030 Introductory remarks
Dr Christopher Longshaw, EU Scientific Advisor, Shionogi & BSAC Honorary Treasurer

SESSION FIVE: CLINICAL DEVELOPMENT

Chair: Professor Anil Koul, Vice President and Head of Global Public Health Discovery Research at Johnson & Johnson and Professor of Translational Discovery at the London School of Hygiene and Tropical Medicine

1035
Overview of clinical pipeline for antimicrobials - will it meet the future unmet need?
Professor Mical Paul, Head, Division of Infectious Diseases, Rambam Health Care Campus, Israel

1050
Emerging antibiotic market in the Indian subcontinent
Mr Anmol Aggarwal, Lead, R&D Strategy, Venus Medicine Research Centre, India

1105
Clinical development of non-traditional antibiotics
Dr Balganesh Tanjore Soundararajan, President, Gangagen Biotechnologies Pvt Ltd, Bangalore, India

1120
Q&A

1130
BREAK

SESSION SIX: ORAL POSTER PRESENTATIONS - 5 X 5 MINUTE PRE-RECORDED PRESENTATIONS FOLLOWED BY LIVE Q&A

Chair: Dr Geetanjali Kapoor, Research Fellow, Center for Disease Dynamics, Economics & Policy

1140
Evaluating the veterinarian role in one health approach at antimicrobial resistance perspectives, Jordan
Bazzi Randa, Faculty of Public Health, University of Debrecen

1145
The ESKAPE pathogens mobilome
João Botelho, Postdoctoral Researcher, Max Planck Institute for Evolutionary Biology

1150
Utilising health belief model to assess antimicrobial awareness of Western Australian parents: A qualitative study
Aaron Alejandro, PhD Candidate, Murdoch University Australia

1155
Nanobodies as inhibitors of the SOS-response: a new class of potential suppressors of antimicrobial resistan
Filippo Vascon, PhD student, Università degli Studi di Padova

1200
Phage mediated beta-lactamases and carbapenemases in multi-drug resistant Escherichia coli
Juliet Roshini Mohan Raj, Assistant Professor, Nitte University Centre for Science Education and Research

1205
Q&A

1215
BREAK

SESSION SEVEN: IMPACT OF THE COVID-19 PANDEMIC ON INFECTIONS AND ANTIMICROBIAL RESISTANCE

Chair: Dr V Ramsubramanian, Consultant Infectious Diseases Apollo Hospitals, Chennai

1225
Impact of Covid 19 on Antimicrobial stewardship
Dr Andrew Seaton, Consultant in Infectious Diseases and General Medicine, NHS Greater Glasgow and Clyde

1240
How has Indian AMR data changed post-Covid
Dr Kamini Walia, Program officer AMR Division of Epidemiology and Communicable Diseases, Indian Council of Medical Research

1255
Impact of Covid-19 on treatment of fungal infections
Dr Arunaloke Chakrabarti, President of International Society for Human and Animal Mycology (ISHAM)

1310
Q&A

1320
BREAK

PROGRAMME: 3 FEBRUARY

SESSION EIGHT: PANEL DISCUSSION
Chair: Professor Philip Howard OBE, AMR Regional Antimicrobial Stewardship Lead NHS England & NHS Improvement - North-East & Yorkshire

1330

More than one way to do it – R&D of new antimicrobials: incentives and models

Panellists: Dr Anand Anandkumar, Co-Founder & CEO of Bugworks, Dr Jean-Pierre Paccaud, Director, Business Development and Corporate Strategy Global Antibiotic R&D Partnership (GARDP), Ms Jenny Hellmann, Assistant chief of Antibiotics and Infection control unit, Public Health Agency of Sweden

1425

Closing remarks
Professor Laura JV Piddock, Scientific Director, GARDP

PROGRAMME ABSTRACTS

SESSION TWO: EARLY DRUG DISCOVERY: NEW TARGETS AND NEW CHEMISTRY

1115 - DUAL FLUORESCENT TIMER MODULE FOR SCREENING OF ANTI-PERSISTER AGENTS

Persisters represent noninheritable drug-tolerant populations that are linked to recalcitrant infections in health-care settings. The challenge to discover novel agents capable of eradicating bacterial persisters has kept the output of novel anti-persister agents to extraordinarily low-levels, mainly due to currently available time-consuming anti-persister assays. Here we report a dual-fluorescent module in *Acinetobacter baumannii*, which is capable of differentiating growth-arrested persisters from normally dividing cells. This system can screen in real-time for a partner antibiotic that can kill the antibiotic-induced *A. baumannii* persisters by detecting a decrease in fluorescence signal of an expressed protein with a longer maturation time.

1130 - DISCOVERY AND OPTIMIZATION OF β-SLIDING CLAMP (DNAN) INHIBITORS

The β subunit of bacterial DNA polymerase III (sliding clamp, DnaN) is an attractive antibacterial target:1,2 It is essential for bacterial replication and survival, structurally conserved, yet different from its eukaryotic equivalent. We embarked on a structure-based virtual screening campaign, affording novel chemotypes with micromolar affinity and promising antibacterial activity. Mode-of-action studies confirmed DnaN as the molecular target. The new compound displays broad-spectrum antibacterial activity against mycobacteria, Gram-positive, and Gram-negative pathogens also against multidrug-resistant bacteria with no cytotoxicity. The ongoing hit-to-lead program enabled us to establish the structure–activity relationships and improve the activity.

1145 - NEW WAYS TO IDENTIFY NOVEL ANTIBACTERIAL CHEMICAL ENTITIES - IDENTIFICATION OF NOVEL ANTIBACTERIALS USING MACHINE LEARNING TECHNIQUES

Target based drug discovery in antibiotics has recently struggled to produce. This is due to the limited focus of drug targets within the vast bacterial biochemical network and their context as part of an intricate system. Using AI/ML, Oppilotech have mapped the biochemical space and the interactions of enzymes, substrates and metabolites, beyond the genomic level, to rank the viable antibiotic drug targets. This not only provides novel, otherwise non-intuitive drug targets but also helps to explain why they are good (or not) at the discovery stage. We have successfully started development against 2 targets and have scope for more.

SESSION THREE: PRECLINICAL ANTIMICROBIAL DEVELOPMENT

1220 - WHO PRIORITY PATHOGEN LIST AND WHO PRECLINICAL PIPELINE ANALYSIS

The presentation will focus on the WHO role in shaping R&D to fight AMR and ensure access to new antimicrobial agents guiding research efforts and investments by defining and updating priorities of global public health importance. Within the WHO tools available to researcher, pharmaceutical companies and policy makers on antibacterials, the new WHO annual pipeline review will be presented with an in depth focus on the preclinical landscape.

SESSION FIVE: CLINICAL DEVELOPMENT

1035 - OVERVIEW OF CLINICAL PIPELINE FOR ANTIMICROBIALS - WILL IT MEET THE FUTURE UNMET NEED?

Funding initiatives have boosted antimicrobial drug development . Very few of the developed products reach phase 3 trials and are approved. The costs of developing a new antimicrobial are prohibitive. New antibiotics targeting multidrug-resistant priority pathogens are usually tested in trials included no or few patients with target priority pathogens, creating an evidence gap. We have little information on the efficacy of the new antimicrobials for the indications where they are needed. Clinical needs include better treatment against carbapenem-resistant Acinetobacter baumannii causing pneumonia and meningitis and oral treatment options against ESBL-producing Enterobacterales causing urinary tract infections in the community and all different types of infection in the hospital. A funding scheme that will allow the use of the new drugs when needed in resource-limited settings and models are needed to predict resistance development with use.

1105 - DISCOVERY AND DEVELOPMENT OF NON TRADITIONAL ANTIBIOTICS- CHALLENGES

Bacteriophage encoded ectolysins are protein molecules that transiently cleave the peptidoglycan of the susceptible bacterial cell wall to facilitate introduction of the phage DNA into the host. These enzymes are structural proteins and are located along with the genes encoding the tail fibre proteins of the phage. Can such a molecule be developed into a narrow spectrum anti-staphylococcal therapeutic?

The presentation will discuss the design, construction and optimisation of P128, a chimeric ectoysin with potent activity against MRSA. The protein also shows strong synergistic effect with standard of care antibiotics both on planktonic MRSA as well as MRSA growing as biofilms. The positioning and development of the protein was based on its potent synergistic effect seen in appropriate infection animal models of MRSA. The path chosen to progress this molecule will also be highlighted.

SESSION SIX: ORAL POSTER PRESENTATIONS

1145 - THE ESKAPE PATHOGENS MOBILOME

We performed here the first systematic analysis of specific mobile elements (MGEs) in the ESKAPE pathogens. We found that i) different MGE types are asymmetrically distributed across the ESKAPE pathogens; ii) some MGEs are capable of exchanging DNA beyond the genus (and phylum) barrier; iii) most genes on MGEs have unknown functions; iv) antibiotic resistance (AR) genes and anti-CRISPRs are overrepresented in the ESKAPE mobilome; v) CRISPR targets vary according to MGE type. Overall, our study highlights the general importance of the ESKAPE mobilome in contributing to the spread of AR and mediating conflict among MGEs.

1145 - UTILISING HEALTH BELIEF MODEL TO ASSESS ANTIMICROBIAL AWARENESS OF WESTERN AUSTRALIAN PARENTS: A QUALITATIVE STUDY

Aim: Our study aims to determine local factors that promote or prevent responsible use of antibiotics for their children among parents in Perth, Western Australia.

Method: A qualitative and explorative research design of focus group discussions (FGD) was used in this study.

Results: Participants agreed that antimicrobial resistance is a serious public health problem. However, participants agreed that they did not have enough knowledge and awareness of AMR to assess the risks of their children developing antimicrobial resistant organism infection and did not perceive the likelihood of their children developing antimicrobial resistant infections.

Conclusion: Our study identified factors that promote or prevent responsible use of antibiotics among children in community setting. Incorporating parent empowerment, participation in decision-making regarding antibiotics and maintaining a positive relationship with healthcare provider may be important strategies to encourage appropriate use of antibiotics in children.

1200 - PHAGE MEDIATED BETA-LACTAMASES AND CARBAPENEMASES IN MULTI-DRUG RESISTANT ESCHERICHIA COLI

The study aimed at identifying the resistance determinants present in multidrug resistant Escherichia coli and the mobility of these genes as inducible prophages. Thirty-five anonymized MDR E.coli isolates were screened for genes encoding beta-lactamases and carbapenemases in bacterial genome and prophage fractions. The transducing ability of the induced prophages were determined. CTX-M and NDM were detected in majority of isolates. Seventy five percent prophage fractions were positive for AMR genes. Transduction with nine lysates yielded one transductant positive for TEM and 4 for CTX-M.

SPEAKERS

Mr Anmol Aggarwal

Lead, R&D Strategy, Venus Medicine Research Centre, India

Anmol is responsible for advancing VMRC's pipeline from the inception phase through to market launch. He is involved from bench-to-bedside in the designing and implementation of scientific and business strategy for drug candidates, primarily in the anti-infective segment. He is passionate about Antimicrobial Resistance and is a member of AMR Industry Alliance's Research and Appropriate Use Working groups. Anmol is also a part of the founding team at the Preserving Life of Existing Antibiotics (PLEA) Trust and is actively involved in organising various campaigns to increase AMR awareness and promote antibiotic stewardship.

Aaron Alejandro

PhD Candidate, Murdoch University, Australia

Aaron Alejandro is originally from the Philippines, studied nursing at the University of Perpetual Help, Laguna and Masters of Health Administration, Policies and Leadership at Murdoch University. A registered nurse, he has more than ten years working experience in healthcare in Neurology in the Philippines, New Zealand and Australia.

Currently, he has an Australian Rotary Health Scholarship to attend Murdoch University to pursue PhD in designing and evaluating campaign to advance our practices of parents about antimicrobial resistance.

Dr Anand Anandkumar

PhD, Co-Founder, CEO of Bugworks

Anand Anandkumar is co-founder and CEO of Bugworks, India. A startup working on tackling the problem of drug resistance.

Bugworks is designing next-generation antibiotics that can tackle a broad spectrum of superbugs and will enter clinical trials in late 2020. More recently the company has also forayed into the design of broad-spectrum anti-virals. Bugworks has won many national and international innovation awards including the Best biotech startup in India 2015, Economic Times Top Innovator award 2017 and is the first company from Asia to win the coveted CARB-X grant.

Anand was previously co-founder and Managing Director at Cellworks, a company that is a pioneer in the personalized cancer therapy area. Here, he used mathematical modelling frameworks to simulate cancer pathways. Before this, Anand worked within the semiconductor industry.

Amongst other industry affiliations, Anand is a board member of the AMR Industry Alliance and advisor to the Centre for Cellular and Molecular Platforms (C-CAMP), CARBX's India incubator. He is also a member of GARDP's India advisory board. Anand is also an avid philanthropist and founding trustee of CHILD, an NGO in India that takes care of young children orphaned by HIV/AIDS. He is also a co-founder of Humanist India, a foundation that supports Cancer treatment for those below the poverty line

Anand received his Bachelors of Engineering in Electronics and Communication from College of Engineering Guindy, Anna University, India. He went on to receive his masters and doctorate degrees in Electrical and Biomedical Engineering from George Washington University, USA

Dr Manica Balasegaram

Executive Director, Global Antibiotic Research & Development Partnership (GARDP)

Dr. Manica Balasegaram trained as a medical doctor at the University of Nottingham, UK from where he started his career in internal and emergency medicine. From 2001 onwards, he worked as a doctor and researcher in several countries including in Sub- Saharan Africa and Southern Asia. He has gained significant experience working in humanitarian emergencies and responses, largely with Médecins Sans Frontières (MSF).

In 2007, Dr. Balasegaram joined the Drugs for Neglected Diseases initiative as Head of Leishmaniasis Clinical Program. In 2011, he returned to MSF as Executive Director of their high-profile Access Campaign. He was appointed Executive Director of GARDP and has led the organization since 2016 through its incubation to an independent legal entity, during which time GARDP launched four programmes and built a skilled and dedicated team with expertise from a range of sectors and backgrounds.

Dr. Balasegaram has significant experience in organizational governance and is currently a board member of the Medicines Patent Pool as well as of FIND's Scientific Advisory Committee. He has also previously served as a Board Member and Secretary of Médecins Sans Frontières (Switzerland).

His experience spans clinical and public health practice in infectious diseases to international work on health policy & access to medicines. He has served on numerous technical and health policy panels, including notably as a Member of the Expert Advisory Group of the UN High Level Panel on Access to Medicines (2015-16), a Member of the WHO Scientific Advisory Group for the Blueprint on Research & Development Preparedness and most recently, as a Member of the WHO Independent Allocation of Vaccines Group (IAVG).

With over 20 years' experience in Global Health, Dr. Balasegaram has a proven track record in partnership building, resource mobilization, public and private sector stakeholder management and governance.

João Botelho

Postdoctoral Researcher, Max Planck Institute for Evolutionary Biology

João Botelho is a Postdoctoral Research Associate in Antimicrobial Resistance Evolution at the Max Planck Institute for Evolutionary Biology in Germany. His research is focused on the crossroads of mobile genetic elements and antibiotic resistance. João completed his PhD in 2018 at the University of Porto in Portugal, in which he was using experimental and computational approaches to study mobilization events of antimicrobial resistance genes in Pseudomonas aeruginosa. João is currently using computational and experimental approaches to tackle antibiotic resistance in an evolutionary context.

Professor Sujith John Chandy

Professor, Department of Pharmacology & Clinical Pharmacology Christian Medical College, Vellore

Dr. Sujith J Chandy is Professor, Department of Pharmacology & Clinical Pharmacology at Christian Medical College, Vellore, India, and Director of ReAct Asia Pacific. His PhD was awarded from Karolinska Institutet for his work on antibiotic use. Dr. Chandy is a resource person at many national and international workshops, and is a member of the WHO SEARO AMR Task Force and the WHO Strategic Advisory Group on AMR. Dr. Chandy's interests include clinical pharmacology, medicine use and safety, and pharmaceutical ethics. However, his passion continues to be speaking about antibiotic use and stewardship to students, professionals and the wider community.

Dr Arunaloke Chakrabarti

President of International Society for Human and Animal Mycology (ISHAM)

He is currently the President of International Society for Human and Animal Mycology (ISHAM), had been the President of Society for Indian Human and Animal Mycologists (SIHAM), President of Indian Association of Medical Microbiologists.

He has consistently helped in the development of the discipline of Medical Mycology and laboratories in India and member countries of SEARO, WHO. His laboratory is recognized as 'Center of Advanced Research in Medical Mycology' in India (initially sponsored by ICMR), 'WHO Collaborating Center for Reference and Research on Fungi of Medical Importance'. He is the curator of 'National Culture Collection of Pathogenic Fungi' (initially sponsored by ICMR).

He is also working as the International Coordinator of 'Antifungal resistance surveillance network' under WHO, member in the WHO 'Antifungal Expert Group on Identifying R&D Priorities', the chair of Asian Fungal Working Group under ISHAM, and Chair of Fungal Infection Study Forum. He is Section Editor/Associate Editor/Deputy Editor of four international journals –Journal of Medical Microbiology, Mycoses, Current Fungal Infection Report and Medical Mycology Case Report

He has published 432 papers in the field of Medical Mycology and delivered lectures in >400 medical conferences and societies. He wrote chapters in 20 books. He edited two books 'Fungal Infections in Asia-The Eastern Frontier of Mycology' and 'Clinical Practice of Medical Mycology in Asia'. His major contribution is in the field of epidemiology of fungal sinusitis, sporotrichosis, mucormycosis, and hospital acquired fungal infections.

He received multiple awards from National Societies, Academies of India, and was awarded the Fellow of National Academy of Medical Sciences (FAMS), Fellow of The National Academy of Sciences, India (FNASc), Fellow of European Confederation of Medical Mycology (FECMM), and Fellow Infectious Disease Society of America (FIDSA). Recently he is selected to receive 2022 ASM Moselio Schaechter Award.

Dr Erin M Duffy

Chief of R&D, CARB-X

Erin Duffy is the Chief of Research & Development at CARB-X. CARB-X is a global non-profit partnership dedicated to accelerating antibacterial research to tackle the global rising threat of drug-resistant bacteria. With up to US$480 million to invest in 2016-22, CARB-X funds the world's largest early development pipeline of new antibiotics, vaccines, rapid diagnostics, and other products to prevent, diagnose and treat life-threatening bacterial infections. Prior to CARB-X, she worked at Melinta Therapeutics (fka Rib-X Pharmaceuticals) where she became EVP, Chief Scientific Officer and R&D site head. Erin began her pharmaceutical career at Pfizer Central Research.

Dr Valeria Gigante

Team Lead, One Health Research Priority-setting and Synergy in AMR, WHO

Dr. Valeria Gigante is Team Lead at the World Health Organization (WHO) in the AMR Division where she coordinates research and priority-setting.

Dr Gigante worked for the European Medicines Agency, for the Italian Medicines Agency until joining WHO in 2017.

Dr Gigante holds a Master Degree in Pharmacy with training in Microbiology and Hygiene, a Ph.D. in Pharmacology and Toxicology on available therapies for MDR-TB. She has executive education from INSEAD.

Dr Gigante represents WHO in the Scientific Advisory Committees of GARDP and of the AMR Action Fund as observer.

Ms Jenny Hellmann

Assistant chief of Antibiotics and Infection control unit, Public Health Agency of Sweden

I work as an analyst and assistant head of the unit Antibiotics and Infection Control at the Public Health Agency of Sweden (PHAS). I have been working within the antibiotic resistance and antibiotic use area since 2009. I started my career at the national STRAMA office in Sweden, with focuses on rational use of antibiotic and antibiotic stewardship programs. Since 2014 I have been the project leader for the PHAS´s work regarding availability of antibiotics at the Swedish market. And since 2018, I´m the project leader of the Swedish pilot study of a new reimbursement model to ensure the availability of new antibiotics in Sweden.

Professor Dr Anna K. H. Hirsch

Head of department, Drug Design and Optimization (DDOP) Helmholtz-Institute for Pharmaceutical Research Saarland (HIPS)

As of 05/17 Head of department and full professor, Helmholtz Institute for Pharmaceutical Research Saarland and Saarland University, Saarbrücken, Germany

2015–2017 Associate professor structure-based drug design, University of Groningen, NL

2010–2015 Assistant professor of bio-organic chemistry, University of Groningen, NL

2008–2010 Postdoctoral Fellow, Institut de Science et d'Ingénierie Supramoléculaires, France Prof. J.-M. Lehn: supramolecular and dynamic covalent chemistry.

Dr Susan Hopkins

Chief Medical Advisor, Clinical & Public Health Lead, UKHSA UKHSA (formerly PHE) / DHSC / Royal Free Hospital, UK

In October 2021 Susan became Clinical & Public Health Transition Lead and the Chief Medical Advisor for UKHSA.

Previously she was the Interim Chief Medical Advisor at NHS Test and Trace and the Strategic Response Director for COVID-19 in PHE and led the division of healthcare-associated infections and antimicrobial resistance.

She was appointed in 2006 as a consultant in infectious diseases and microbiology at the Royal Free London and continues to practice clinically.

She holds current research funding of approximately £20million with research partners across the UK and has more than 250 peer-reviewed publications related to infectious diseases.

Professor Philip Howard OBE

AMR Regional Antimicrobial Stewardship Lead, NHS England & NHS Improvement - North-East & Yorkshire, UK

Philip Howard is AMR Regional Antimicrobial Stewardship Lead, NHS England & NHS Improvement – North-East & Yorkshire, UK and is the immediate Past President of the British Society of Antimicrobial Chemotherapy.

He is a member of the UK Dept of Health advisory group on AMR & HCAI and the NICE common infections guidelines group.

His research interests include Antimicrobial Stewardship and antibiotic shortages. He has been involved in AMS education and training across the world. He's a Fellow of Royal Pharmaceutical Society, and has won the GHP/GSK/UKCPA Clinical Leadership Award, the UKCPA Lifetime Achievement Award and an OBE for his services to healthcare.

Dr Geetanjali Kapoor

Head, South Asia Office, Center for Disease Dynamics, Economics & Policy

Dr Geetanjali Kapoor is a physician and medical microbiologist (JNMC Aligarh, India). She holds a Master of Public Health (Johns Hopkins University) and is a Fellow in General Infectious Diseases (Christian Medical College, Vellore, India).

Geetanjali is the Head of South Asia at Center for Disease Dynamics, Economics & Policy (CDDEP), where she is leading the establishment of the world's first One Health Demographic and Health Surveillance System (DHSS). She is the antimicrobial resistance (AMR) focal point for implementation of Fleming Fund Regional Grant in Africa and has co-authored 'State of the World's Antibiotics Report 2021', a compilation of global AMR data and correlates.

Professor Anil Koul

Vice President and Head of Global Public Health Discovery Research at Johnson & Johnson and Professor of Translational Discovery at the London School of Hygiene and Tropical Medicine

Prof. Anil Koul is currently Vice President and Head of Global Public Health Discovery Research at Johnson & Johnson. He is also Professor of Translational Discovery at The London School of Hygiene and Tropical Medicine. The lab in the London School is focused on TB translational medicine research. He is a member of the Board Of Directors at Janssen Pharmaceutica NV, Belgium and a Scientific Advisory Board Member for the Council of Scientific and Industrial Research (CSIR), government of India. He has played a key role in discovery and development of the new TB drug, named bedaquiline. For the discovery of bedaquiline, he was awarded with several awards, including the American Chemical Society (ACS) Annual Award in 2020.

Dr Ramanan Laxminarayan

Director, CDDEP

Laxminarayan is founder and director of the Center for Disease Dynamics, Economics & Policy (CDDEP) in Washington, D.C., and a senior research scholar at Princeton University. He is an affiliate professor at the University of Washington and a visiting professor at the University of Strathclyde in Scotland and at the University of Kwazulu Natal in South Africa. Laxminarayan chairs the board of GARDP, a global product development partnership created by the World Health Organization, that aims to develop and deliver new treatments for bacterial infections. He is also founder and board chair at HealthCubed, which works to improve access to healthcare and diagnostics worldwide.

Dr Christopher Longshaw

Senior Director, EU Scientific Affairs, Shionogi BV & BSAC Honorary Treasurer

Chris studied Medical Microbiology at Leeds University, UK, gaining his PhD for work on the colonisation factors of coagulase-negative staphylococci. He joined Cubist Pharmaceuticals in 2001, working on a joint EU-project to find novel ways to prevent spread of antimicrobial resistance via inhibition of conjugative plasmid transfer. After a period with Syngenta BioPharma screening for novel medicinal antimicrobials from agrochemical libraries, he swapped R&D for Medical Affairs, joining Wyeth Pharmaceuticals UK (later Pfizer UK) as Scientific Advisor for their Anti-infective portfolio which included pipericillin-tazobactam and tigecycline. Chris joined Astellas Pharmaceuticals Europe in 2010 as Associate Director for Microbiology, working on the development, launch and commercialisation of multiple antimicrobials including telavancin, fidaxomicin, micafungin and isavuconazole and was Country Medical Affairs Manager for Basilea Pharmaceuticals, supporting the commercialisation of isavuconazole and ceftobiprole in the UK.

Chris joined Shionogi Pharmaceuticals in 2017 as EU Scientific Advisor for Infectious Diseases and works with medical, commercial and development teams at National, European and Global levels to provide medical and scientific leadership, most recently focused on the regulatory approval of the antibiotic, cefiderocol.

Chris has co-authored numerous peer-reviewed publications including high impact journals such as Lancet Infectious Disease and Eurosurveillance and was one of the EFPIA co-leads within the Innovative Medicines Initiative/New Drugs 4 Bad Bugs project, DRIVE-AB. Chris is a member of the Scientific Committee for Antibiotic Research UK and has been a member of council for the British Society for Antimicrobial Chemotherapy and Industry representative for the Resistance Surveillance Working Group before taking up the office of Honorary Treasurer from 2018.

Dr Jean-Pierre Paccaud

Director, Business Development and Corporate Strategy Global Antibiotic R&D Partnership (GARDP)

Dr. Jean-Pierre Paccaud is heading the business development and corporate strategy activities of GARDP since January 2017, and contributed to its inception and setup. Previously, he was heading the business development and legal team of the Drugs for Neglected Diseases initiative (DNDi) since 2007. Prior to joining DNDi, Jean-Pierre founded in 2002 Athelas SA, a company active in the field of anti-bacterial drug discovery, which he lead until its merger with Merlion Pharmaceuticals in 2006. Previously, he spent more than 18 years in academia, working in immunology, diabetes, and cell biology, and was tenured at the University of Geneva School of Medicine. Trained as a molecular and cellular biologist, he earned his PhD at the University of Geneva School of Medicine, and completed his post- doctoral studies at the University of California at Berkeley in the laboratory of Prof. Randy Schekman.

Professor Ranjana Pathania

Professor Indian Institute of Technology Roorkee (IIT Roorkee)

Prof. Ranjana Pathania is a professor in the Department of Biosciences and Bioengineering in Indian Institute of Technology Roorkee where she joined from 2007. She is a DBT/Wellcome Trust India Alliance Senior Fellow. Before joining to IIT Roorkee, she was a Postdoctoral Research Fellow at McMaster University in Prof. Eric Brown's lab for four years. Prof. Pathania obtained her Ph.D. from CSIR-IMTECH Chandigarh, India in 2004. Her research focus is to understand molecular mechanisms through which bacterial pathogens develop antibiotic resistance so as to develop potent strategies to discover novel antibacterial compounds. Her research has led to several seminal contributions in this direction.

Professor Mical Paul

Head, Division of Infectious Diseases, Rambam Health Care Campus, Israel

University affiliation: Prof. The Ruth and Bruce Rappaport Faculty of Medicine, Technion, Israel Institute of Technology

Mical Paul's research is clinical and focuses on the management of infections in the hospital, multidrug-resistant bacteria, endemic infections and computerized decision support. She is an editor with Clinical Microbiology and Infection and the Cochrane Infectious Diseases Group, member of several World Health Organization and member of The Israeli National Academy of Science in Medicine. She is an ESCMID fellow, past chairperson of ESGIE and an ESCMID guidelines sub-committee member.

Professor Laura JV Piddock

Scientific Director, Global Antibiotic Research & Development Partnership (GARDP)

Laura Piddock joined the Global Antibiotic Research and Development Partnership (GARDP) in January 2018. As GARDP's Scientific Director, Laura leads the Discovery and Exploratory Research and Scientific Affairs programmes, including the REVIVE programme. She also contributes to GARDP's Policy & Advocacy activities.

Laura has been involved in various Policy activities. She was the British Society for Antimicrobial Chemotherapy (BSAC) Chair in Public Engagement, and in this role was the Director of Antibiotic Action and led the secretariat of the UK All Party Parliamentary Group on Antibiotics from 2012 – 2017. Laura was a co-author of the first World Economic Forum report on AMR in 2013, and an expert adviser to the AMR review led by Lord Jim O'Neill.

Dr Juliet Roshini Mohan Raj

Assistant Professor, Nitte University Center for Science Education and Research

In the current scenario where antibiotics no longer work, the need for alternative strategies have looked at phage therapy and I have been actively involved in research with bacteriophages and weigh the odds of phage therapy verses phage mediated gene transfer. Focus areas are on phage-based therapeutics for human therapeutic use and biocontrol in foods and mechanisms of antimicrobial gene transfer mediated by phages.

Professor V Ramasubramanian

Consultant Infectious Diseases Apollo Hospitals, Chennai

Dr V Ramasubramanian is a specialist in Infectious Diseases, adolescent and adult vaccinations and travel medicine. He is currently a Senior Consultant in Infectious Diseases, HIV & Tropical Medicine at Apollo Hospital, Chennai and a Professor of Infectious Diseases at the Sri Ramachandra Institute of Higher Education & Research, Saveetha Medical College, Apollo Hospitals Educational & Research Foundation and the MGR Medical University, Chennai. Dr Ramasubramanian graduated from the Madras Medical College and did his post graduation in Internal Medicine from the prestigious Post Graduate Institute in Chandigarh. He trained in Infectious Diseases and HIV in the United Kingdom after getting his MRCP. He also obtained diplomas in Tropical Medicine & Hygiene from the London School of Tropical Medicine and in Genito-Urinary Medicine from the Society of Apothecaries, London.

After he returned to India, he has played a pioneering role in establishing Infectious Disease as a specialty in India. He is passionate about Infection Control and has been instrumental in laying down the principles of Infection Control in several hospitals. He is the Chair of the Hospital Infection Control Committee at Apollo Hospital, Chennai.

He is an excellent teacher and a sought after speaker for conferences.

In 2008, he founded Immune Boosters, a unique clinic dedicated to adolescent and adult vaccinations and Travel Health. The clinic, the first of its kind in India, propagated the concept of preventive health and travel medicine. In 2018, he established The Capstone Clinic (www.thecapstoneclinic.com), a multispecialty family out-patient clinic.

Dr Ramasubramanian has authored several research publications and chapters in text books. He has also been the principal investigator in several international drug trials. He is also a Fellow of the Royal College of Physicians of Glasgow.

Dr Bazzi Randa

Faculty of Public Health, University of Debrecen

My name is Randa Bazzi, a veterinarian specialised in public health, and AMR fighter.
I have around 3 years experience in the field.

Dr Adam Roberts

Liverpool School of Tropical Medicine, UK

Adam Roberts has been investigating the fundamental mechanisms of transferable AMR for more than 20 years and, since arriving at Liverpool School of Tropical Medicine in 2017, has focussed on translational aspects of AMR research and early stage drug discovery and development. His current research activities include investigations of the molecular genetics of mobile genetic elements and how they contribute to the dissemination of AMR, and the discovery and development of novel antimicrobial natural products and target site identification and resistance development potential of novel molecules within the LSTM's drug development pipeline. He is also active in exploring alternative, non-traditional, ways of funding antimicrobial research and development. Adam's research activities are currently funded by the Medical Research Council, the National Institute for Health Research, UK Research and Innovation, the Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) and the European Regional Development Fund. He runs the award winning citizen-science, drug-discovery project Swab and Send, is the Network coordinator of the JPIAMR Network of European and African Researchers on AMR (NEAR-AMR), is a policy advisor on Drug Resistance to the Royal Society of Tropical Medicine and Hygiene.

Professor Priscilla Rupali

Professor, Christian Medical College, Vellore

Dr Priscilla Rupali is Professor of the Department of Infectious Diseases at Christian Medical College Vellore in South India. She has been trained in New Zealand, USA and Peru. She has been working to promote rational use of antibiotics and has many firsts to her credit. She has established a "Fellowship in General Infectious Diseases" which equips physicians working in secondary/tertiary care settings make rational treatment plans for infections. Similarly with Medecins Sans Frontiers (MSF) India a 'Global Health and Humanitarian Medicine' programme providing high-quality training in tropical medicine and public health. She has pioneered a "Fellowship in Antimicrobial Stewardship for Pharmacists" as well to provide clinical pharmacists with training and expertise to establish their position as an integral part of the infection control and antimicrobial stewardship (AMS) team.

Dr Taslimarif Saiyed

CEO & Director of C-CAMP

Dr. Taslimarif Saiyed is the CEO and Director of C-CAMP. He is actively involved in promoting innovation in lifescience / healthcare by supporting translation of discoveries to application, entrepreneurship and technology development. His initial training has been in neurosciences, where he received his PhD from Max-Planck Institute for Brain Research, Germany and followed it up by postdoctoral training at University of California San Francisco (UCSF). At the same time, he also underwent training in management for Biotech and Innovation from QB3 at UC Santa Cruz, UC Berkeley and UC San Francisco. He has also completed a biotech management program for biotech executives at Wharton School of Management. In the Bay area, he served as a Management Consultant with QB3 New Biotech Venture Consulting and in an individual capacity, he also consulted for many biotech firms in the US.

Dr Andrew Seaton

Consultant in Infectious Diseases and General Medicine, NHS Greater Glasgow and Clyde, UK

Andrew graduated from Aberdeen in 1989 and trained in General Medicine/ infectious diseases in Dundee and Papua New Guinea. He was appointed consultant physician in Glasgow in 2000 and he is an Honorary Clinical Associate Professor in the University of Glasgow. He established and leads the NHS Greater Glasgow and Clyde OPAT service and Antimicrobial Management Team. He Chairs the Scottish Antimicrobial Prescribing Group and co-leads the BSAC OPAT initiative. He has >150 peer reviewed publications, is section editor of the international journal of antimicrobial agents and JAC-AMR and has co-produced the BSAC OPAT MOOC on future learn.

Mr Ed Siegwart

Director of Microbiology Oppilotech Ltd

Ed has over a decade of experience working in anti-infective microbiology, having worked in hospital laboratories (Southampton General), contract research (GR Micro and LGC) and the pharma industry (Oppilotech, GSK). With strong anti-infective industry links he has led dozens of large- and small-scale in vitro testing projects to successful completion.

Now working at Oppilotech, Ed is keen to collaborate with and support anyone and everyone working in the antibiotic drug development space. But is particularly excited about his work at Oppilotech!

Dr Balganesh Tanjore Soundararajan

President, Gangagen Biotechnologies Pvt Ltd, Bangalore, India

Trained as a Medical Microbiologist, Dr.Balganesh (TSB) possesses more than three decades of experience in antibacterial drug discovery, with two decades of experience in leading anti-TB research in the industry. TSB served as Head of Research at the AstraZeneca's (AZI) unit in Bangalore, India. The unit specialised in anti-mycobacterial drug discovery. TSB currently serves as President of GangaGen Biotechnologies Pvt Ltd., Bangalore, a company working on discovering novel therapies for the treatment of serious bacterial infections.

Dr Subasree Srinivasan

Medical Director, GARDP

Suba is an experienced infectious disease physician with extensive industry and public health experienced. Educated in India, Suba has lived in the US for the last 30 years and worked in clinical and public health practice and has had a number of senior medical and pharmacovigilance roles in drug development in companies such as Pfizer, BMS and Alexion Pharmaceuticals. Most recently Suba was the VP, Clinical Development and pharmacovigilance for Entasis Therapeutics where she was the clinical development lead for durlobactam, an antibiotic for Acinetobacter infections, and medical and pharmacovigilance lead across a range of antibiotic development programmes.

Suba joined GARDP first as a Consultant providing senior medical direction and support across the portfolio for both our R&D and broader access objectives. Now as GARDP Medical, Director Suba will lead the medical team to provide medical and drug safety direction and leadership and access development, strategy and implementation both within R&D and at the GARDP organizational level.

Professor Dr Evelina Tacconelli

Director, Infectious Diseases Section, Verona University Hospital, Italy & Department of Internal Medicine, DZIF Clinical Research Unit, University of Tübingen, Germany

Evelina Tacconelli is Director of the Infectious Diseases Section at Verona University Hospital, Italy, and at the Department of Internal Medicine, DZIF Clinical Research Unit at the University of Tübingen, Germany.

Evelina coordinated the WHO priority list of antibiotic resistant bacteria for the research and development of new effective antibiotics as well as the WHO project on limitations of estimates of the burden of antibiotic resistant infections within the GLASS (Global Surveillance of Resistant Severe Infections) project. She is Chair of the European Committee for Infection Control (EUCIC), and a WHO and ECDC consultant for infection control and antimicrobial stewardship. Evelina has a wealth of experience in the participation and coordination of European projects and networks focused on antimicrobial resistance.

Filippo Vascon

PhD student, Università degli Studi di Padova

After the master's degree in Industrial Biotechnology, I enrolled in the Biosciences PhD Program at the Univ. of Padova. In my PhD project, I am studying functionally and structurally the bacterial SOS response and its role in the development of antimicrobial resistance and I am investigating potential ways to suppress it.

Dr Kamini Walia

Senior Scientist, Division of Epidemiology and Communicable Diseases, Division of Indian Council of Medical Research

Dr Kamini Walia is a microbiologist by training and has subsequently trained in public health from Johns Hopkins. She is working as Senior Scientist in the Division of Epidemiology and Communicable Diseases Division of Indian Council of Medical Research. She spent 2 years in PATH, as Director, Research and Development. During her 20 years of experience in public health space she has initiated and successfully steered numerous projects and programs of public health importance in the field of infectious diseases, reproductive and child health and noncommunicable diseases. Dr Walia's experience spans working on infectious diseases, including HIV/AIDS programs and heath technologies including vaccines and diagnostics. Dr Walia is currently leading the Antimicrobial Resistance Initiative of ICMR which focusing at various aspects of AMR, including surveillance, antimicrobial stewardship and OneHealth aspects . She curated the National Essential Diagnostics for the country to improve availability of diagnostics at all levels of health care. She is former member WHO Scientific Advisory Group of Experts on Essential Diagnostics.

She is member:

WHO Scientific Advisory Group of Experts on AMR Diagnostics

Scientific Advisory Committee of GARDP

Commissioner on Lancet Commission on Diagnostics

She is recipient if ICMR's Shakuntala Amir Chand award , Indian National Science academy, Young Scientist Award and NIH's Fogarty Fellowship. She has received numerous fellowships and trainings from WHO, NIH, USA, IVI, Seoul, Pasteur Institute, France.

She has more than sixty publications in peer reviewed journals.

POSTERS

Evaluating The Veterinarian Role In One Health Approach At Antimicrobial Resistance Perspectives, Jordan

Bazzi Randa Ahmad, Alaboudi Akram, Gábor Rácz

The ESKAPE mobilome contributes to the spread of antimicrobial resistance and CRISPR-mediated conflict between mobile genetic elements

João Botelho[1,2*], Adrian Cazares[3,4], Hinrich Schulenburg[1,2]
1 Antibiotic Resistance Evolution Group, Max Planck Institute for Evolutionary Biology, Pl n, Germany
2 Department of Evolutionary Ecology and Genetics, Zoological Institute, Christian AlbrechtsUniversity, Kiel, Germany
3 EMBL's European Bioinformatics Institute (EMBL-EBI), WellcomeGenome Campus, Cambridge, United Kingdom
4 Wellcome Sanger Institute, WellcomeGenome Campus, Cambridge, United Kingdom

The unexpected reduction of commonly used antibiotics for children in Western Australia

Aaron Alejandro[1], Mieghan Bruce[1], and Cheryl Leo[1]
1 Murdoch University, Perth, Australia

Functional identification of serine hydroxymethyltransferase as a key gene involved in lysostaphin resistance and virulence potential of *Staphylococcus aureus* strains

Nayab Batool[1,2], Kwan Soo Ko[3], Amen Shamim[4], Akhilesh Kumar Chaurasia[2] and Kyeong Kyu Kim[2,3]
1 Institute of Microbiology, University of Agriculture, Faisalabad, Pakistan
2 Department of Precision Medicine, Institute for Antimicrobial Resistance Research and Therapeutics, Sungkyunkwan University School of Medicine, Suwon 16419, South Korea
3 Samsung Advanced Institute for Health Sciences and Technology (SAIHST), Samsung Medical Center (SMC), Sungkyunkwan University School of Medicine, Seoul 06351, South Korea
4 Department of Computer Science, University of Agriculture, Faisalabad, Pakistan

Evaluation of antimicrobial activity of pigment extracts from pigmented bacteria isolated from poutry faecal wastes in Ikorodu, Lagos Metropolis

[1,4,5]Department of Biological Science, Yaba College of Technology, P.M .B 2011, Yaba Lagos
[2,3]D epartment of Microbiology, Olabisi Onabanjo University, P.M.B. 2002, Ago-Iwoye, Ogun State Nigeria

Combinatorial therapy using plant secondary metabolites to counter antibiotic resistance in bacteria

Bhani Kongkham, Duraivadivel P. , Hariprasad P.
Environmental Biotechnology Lab, Centre for Rural Development and Technology, IIT Delhi, India

Use of checkerboard testing to guide development of ß-lactam/ß-lactamase inhibitor combinations

Darren Bentley
Certara UK Ltd., Level 2-Acero, 1 Concourse Way, Sheffield

Additive effect of Ficus Lemon mixed with Tannic Acid as a disinfectant against *Escherichia coli* and *Staphylococcus aureus*

Bakhtawar Khair[1], Ayesha Tajammul[2], Zubair Ahmed[3]
WaSH Sciences, USPCAS-W, MUET, Jamshoro, Pakistan

Emphasizing Dilemma: Antimicrobial activity of *Solanum melongena* (Brinjal) against Clarithromycin-resistant bacteria

Noor-Un-Nisa Ghanghro[1], Ayesha Tajammul[1]
1 WaSH Sciences, USPCAS-W, MUET, Jamshoro, Pakistan

Computational hypothesis for the identification of suitable drugs for the treatment of long term spaceflight induced antibiotic resistant E. Coli infections in astronauts

Roberto Parisi[1,2] , Siddhant Sharma[2] , Nicolò Soldovieri[3]
1. MD student, Department of Medicine and Surgery, Università degli Studi di Salerno, Baronissi (SA), Italy
2. Blue Marble Space Institute of Science, Seattle (WA), USA
3. Undergraduate student, Department of Biological Sciences, Università degli Studi di Salerno, Fisciano (SA), Italy

Antibacterial activity of *Dimocarpus longan* leaf extract

Ratna Yuliani[1], Dorota Dobrzanska[2], James Dayus[1], Eliot Barson[1], and Sebastien Farnaud[1]
1 Coventry University, United Kingdom
2 Polish Centre for Technology Development

Potent Efficacy of a Dual Antibiotic Combination Againt MRSA

Karem Ibrahem[1], Guoqing Xia[1]
1 Division of Infection, Inflammation and Respiratory Medicine, School of Biological Science, Faculty of Biology, Medicine and Health, University of Manchester

Time dependant anti biofilm activity of endodontic irrigants on *Enterococcus faecalis*

Abdel Rahman Hamza Aly, Nicholas Longridge, Fadi Jarad, Sabeel P Valappil
School of Dentistry, University of Liverpool

A new target to fight *Staphylococcus aureus* infections: structural and mechanistic insight into the interaction of the IsdB hemophore with human hemoglobin, and preliminary inhibition studies

Stefano Bettati[a,b] , Anna Rita Bizzarri[c] , Paul Brear[d] , Salvatore Cannistraro[c] , Barbara Campanini[e] , Dimitri Y. Chirgadze[d] , Barbara Citterio[f] , Lee R. Cooper[d] , Monica Cozzi[a] , Omar De Bei[e] , Serena Faggiano[b,e] , Emanuela Frangipani[f] , Roberta Giaccari[e] , Eleonora Gianquinto[g] , Steven W. Hardwick[d] , Loretta Lazzarato[g] , Giovanni Longo[h] , Ben F. Luisi[d] , Marialaura Marchetti[a] , Luca Ronda[a,b] , Francesca Spyrakis[g]
a Department of Medicine and Surgery, University of Parma, Parma,Italy;
b Institute of Biophysics, National Research Council, Pisa, Italy;
c Department of Ecology and Biology (DEB), University of Tuscia, Viterbo, Italy;
d Department of Biochemistry, University of Cambridge, Tennis Court Road, Cambridge, UK;
e Department of Food and Drug, University of Parma, Parma, Italy;
f Department of Biomolecular Sciences, University of Urbino Carlo Bo, Urbino, Italy;
g Department of Drug Science and Technology, University of Turin, Turin, Italy;
h Institute of Structure of Matter, National Research Council, Rome, Italy.

Nanobodies as inhibitors of the SOS-response: a new class of potential suppressors of antimicrobial resistance

Filippo Vascon[1], Lorenzo Maso[1], Enrica Campagnaro[1], Monica Chinellato[1], Frédéric Goormaghtigh[2,3], Pierangelo Bellio[4], Laurence Van Melderen[3], Els Pardon[5], Alessandro Angelini[6], Giuseppe Celenza[4], Jan Steyaert[5], Donatella Tondi[7], Laura Cendron[1]
1 Dipartimento di Biologia, Università degli Studi di Padova, IT
2 Biozentrum, University of Basel, CH
3 Facult des Sciences, Università Libre de Bruxelles , BE
4 Dipartimento di Sc. Cliniche Applicate e Biotecnologiche, Università degli Studi dell'Aquila, IT
5 VIB-VUB Center for Structural Biology, Bruxelles, BE
6 Dipartimento di Scienze Molecolari e Nanosistemi, Università Ca' Foscari Venezia, IT
7 Department of Life Sciences, Università degli Studi di Modena e Reggio Emilia, IT

Novel alternative antimicrobials as potential broad spectrum antibacterial agents to combat Gram positive and Gram negative bacterial infections

Faith U. Ukachukwu[1] , Raid Alany[1] , Aiste Dijokaite[2] , Myron Christodoulides[2] , Lori A. S. Snyder[1]
1 School of Life Sciences, Pharmacy, and Chemistry, Kingston University, Kingston upon Thames, UK.
2 Faculty of Medicine, University of Southampton, Southampton, UK

Occurrence of metallo-ß-lactamase producing Gram negative bacterial pathogens in COVID 19 and non COVID 19 patients of tertiary care hospital: A clinical outcome

Shriya Shetty[1], Veena Shetty[1], Asha Pai[1] , Ankeeta Menona[2] , Sudhindra Rao[3] , Avinash Shetty[4]
1 Department of Microbiology,
2 Department of Community Medicine,
3 Department of Medicine KS Hegde Medical Academy (Nitte (Deemed to be University), Deralakatte, Mangalore, India
4 Department of Pediatrics and Office of Global Health, Wake Forest School of Medicine and Brenner Children's Hospital, Winston Salem, USA

Phage mediated beta-lactamases and carbapenemases in multi-drug resistant *Escherichia coli*

Juliet Roshini Mohan Raj[1],Akshatha Dinesh[1], Anusha Rohit[2], Indrani Karunasagar[1]
1 Nitte (deemed to be University), Nitte University Center for Science Education and Research, Mangaluru
2 Department of Microbiology, Madras Medical Mission, Chennai

Epidemiology of carbapenem resistant *Enterobacteriaceae* in a teaching Hospital in North Sardinia

Arcadia Del Rio, Andrea Cossu, Illari Sechi, Manuela Usai, Arianna Dettori, Alessandra Palmieri, Bianca Maria Are, Giovanni Sotgiu, Andrea Piana, Narcisa Muresu.
Department of Medical , Surgical and Experimental Sciences, University of Sassari, Sassari, Italy

Activities of Various Antibiotics Against Carbapenem Resistant *Acinetobacter baumannii*

Mayram Hacioglu, Fatima Nur Yilmaz, Ozlem Oyardi
Department of Pharmaceutical Microbiology, Faculty of Pharmacy, Istanbul University, Beyazit, Istanbul, Turkey

The effect of canal geometry on endodontic irrigation and *Enterococcus faecalis* retention

Osamah AlQasem Prof. Fadi Jarad , Dr. Sabeel P Valappil
School of Dentistry, Institute of Life Course and medical science, Faculty of Health & Life Science, University of Liverpool, United Kingdom

Repurposing approved drugs as fluoroquinolone potentiators to overcome efflux pump resistance in *Staphylococcus aureus*

Nisha Mahey[1,2], Rushikesh Tambat[1], Nishtha Chandal[1,2], Dipesh Kumar Verma[3], Krishan Gopal Thakur[3], Hemraj Nandanwar[1,2]
1 Clinical Microbiology & Antimicrobial Research Laboratory, CSIR-Institute of Microbial Technology, Sector 39-A, Chandigarh-160036, India,
2 Academy of Scientific & Innovative Research (AcSIR), Ghaziabad, Uttar Pradesh-201002, India,
3 Structural Biology Laboratory, CSIR-Institute of Microbial Technology, Sector 39-A, Chandigarh-160036, India

Assessing effectiveness of antibiotic therapy against blood pathogen in intensive care and inpatient unitin unit using drug resistance index

Yunika Puspa Dewi[1], Andaru Dahesihdewi[2], Eni Purwaningtyastuti[3], Ingrid Angelica Manoy[2]
1 Clinical Pathology Division Dr. Sardjito General Hospital
2 Clinical Pathology Division Dr. Sardjito General Hospital/Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada
3 Committee for Antimicrobial Resistance Control Program Dr. Sardjito General Hospital

Computational Pharmacokinetic and AMR Quantification of Antineoplastic Chemotherapeutic Doxorubicin for Treatment of Ovarian Cancer

Kanishk Singh[1], Amritaparna Maity[1], Roberto Parisi[2], Nicolò Soldovieri[3], Siddhant Sharma[1] and Dr. Vineeta Kashyap[1]
1 Department of Biochemistry, Deshbandhu College, University of Delhi, India,
2 Università degli Studi di Salerno, Department of Medicine and Surgery, Baronissi, Italy
3 Università degli Studi di Salerno, Department of Biological Sciences, Fisciano, Italy

Prediction of AMR and antibiotic discovery using Deep Neural Networks: A review

Saanya Yadav, Rashi Sharma, Neha Yadav
Department of Biotechnology, Delhi Technological University
Bawana Road, Delhi Technological University, Shahbad Daulatpur Village, Rohini, Delhi
Department of Biophysics, University of Delhi, Benito Juarez Road,South Campus, South Moti Bagh, Delhi

Polydimethylsiloxane/CuBTC/Gallic acid film as a potent antibacterial superhydrophobic surface

Esmaeil Darabpour[1], Fatemeh Naderi[1], Reza Sacourbaravi[1] and Zeinab Ansari-Asl[2]
1 Department of Biology, Faculty of Science, Shahid Chamran University of Ahvaz, Ahvaz, Iran
2 Department of Chemistry, Faculty of Science, Shahid Chamran University of Ahvaz, Ahvaz, Iran

The Role of Conjugative Plasmids in Transferring Resistance in XDR *Acinetobacter baumannii*

Sara Al Sbei[1]; Qutaiba Ababneh[1]; Ziad Jaradat[1]; Sebawe Syaj[1]; Neda'a Aldaken[1]
1 Jordan University of Science and Technology, Department of Biotechnology and Genetic Engineering, Faculty of Science and Arts.

New semi-synthetic derivatives of the natural product chlorotonil with enhanced properties against multi-drug resistant pathogens

Felix Deschner[1,2], Walter Hofer[1,2], Linda P tzold[3], Markus Bischoff[3], Jennifer Herrmann[1,2,4], Rolf Müller[1,2,4]
1 Helmholtz Institute for Pharmaceutical Research Saarland (HIPS) – Saarbrücken (Germany)
2 Helmholtz Centre for Infection Research (HZI) – Braunschweig (Germany)
3 Institute for Medical Microbiology and Hygiene (IMMH), Saarland University – Homburg (Germany)
4 German Centre for Infection Research (DZIF) – Braunschweig (Germany)

Sensitivity of *E. coli* isolated from milk to antibiotics

Valerii USHKALOV[1] , Lilia VYGOVSKA[1] , Vyacheslav DANCHUK[1] , Artem USHKALOV[2] , Aidyn SALMANOV[3] , Liliana DAVYDOVSKA[1]
1 National University of Life and Environmental Sciences of Ukraine,
2 Main administration of state service of Ukraine on food safety and consumer protection in Kharkiv reg.
3 Shupyk National Medical Academy of Postgraduate Education, Ukrainian National Committee of Infection Control and Antimicrobial Resistance

Retrospective audit of Antibiotic Prophylaxis in Spinal patients at Mater Private Network Cork 2019 vs 2021

Smiddy C[1], Fitzmaurice K[2], Nugent F[3].
1 School of Pharmacy University College Cork
2 Microbiology Department, Mater Private Network Cork
3 Pharmacy Department, Mater Private Network Cork

Extracellular synthesis of silver nanoparticles facilitated by soil-dwelling *Bacillus thuringiensis*: their characterization and antibacterial studies

Afolayan, M.E., Afegbua, S. L. and Ado, S.A.
Department of Microbiology, Ahmadu Bello University, Zaria

BIOFILM REDUCTION OF Methicillin Resistant Staphylococcus aureus (MRSA) AFTER ANTIMICROBIAL PHOTODYNAMIC THERAPY WITH PHOTODITHAZINE - in vitro study

Beatriz Müller Nunes Souza, Isabele de Paula Ribeiro, Juliana Teixeira Pedroso, Juliana Guerra Pinto e Juliana Ferreira Strixino
Photobiology Applied to Health (PHOTOBIOS), Research and Development Institute (IP&D), University of Vale do Paraiba (UNIVAP), São José dos Campos, São Paulo, Brazil

Determination of antibiotic resistance pattern of *Escherichia coli* isolates from poultry farms in Kerala, India

Vyshnav PV[1], Tushar Midha, Aaina, Somesh Baranwal[1]
1 Department of Microbiology Central university of Punjab, Bathinda

Identifying hub genes and significant pathways in Acinetobacter baumannii infection by transcriptomic analysis

Aishwarya Swain[1], Archana Pan[1]
1 Dept . of Bioinformatics, School of Life Sciences, Pondicherry University, Pondicherry, India

Fusidic acid resistance among *Staphylococcus aureus* skin and soft tissue infections in Portugal

Teresa Conceição[1], Carolina Ferreira[1], Rita Lúzio1, Herminia de Lencastre[1,2]
1 Laboratório de Genética Molecular, Instituto de Tecnologia Quimica e Biológica António Xavier (ITQB NOVA), Oeiras, Portugal;
2 Laboratory of Microbiology and Infectious Diseases, The Rockefeller University, New York, USA

Heavy metal tolerance and antibiogram of methicillin resistant *Staphylococcus aureus* isolated from environmental samples and hand swabs of livestock workers at some livestock farms in Zaria, Nigeria

Afegbua, S.L., Mahmud, J.,Muktar, S. Ibrahim, H., Abubakar, B. Salisu, K., Abubakar . M. Yahaya, B.
Department of Microbiology, Ahmadu Bello University, Zaria, Nigeria