

ECCMID 2021

Basel, Switzerland. July 6, 2021, 9am CEST

BioVersys presents update on its innovative antimicrobial pipeline with three oral and six poster presentations at 31st European Congress of Clinical Microbiology & Infectious Diseases, July 9-12, 2021

BioVersys is developing novel solutions to tackle both Carbapenem Resistant *Acinetobacter baumannii* and multi-drug resistant Tuberculosis infections and data will be presented on our two clinical projects, and our paradigm-changing anti-virulence approach addressing Methicillin-Resistant *Staphylococcus aureus* (MRSA), via three oral presentations and six poster presentations:

BV100 for Carbapenem Resistant *Acinetobacter baumannii*:

Top Rated ePoster #998: Efficacy of BV100 against *Staphylococcus aureus* in neutropenic thigh and lung infection mouse models

Poster Session S163: 5a. Mechanisms of action, new compounds, preclinical data & pharmacology of antibacterial agents

Presenter: Sergio Lociuero, PhD, Chief Scientific Officer

Timing: Monday, July 12, 2021; 16:00-17:00 CEST

BV100 displays a potent *in vivo* activity towards *S. aureus*, including MRSA, in both neutropenic lung and thigh models of infection. The safety and tolerability of BV100, a novel intravenous formulation of rifabutin, is currently investigated in Phase I clinical studies.

ePoster #1002: *In vivo* efficacy of BV100 in mouse models of *Acinetobacter baumannii* infection

Poster Session S163: 5a. Mechanisms of action, new compounds, preclinical data & pharmacology of antibacterial agents

Corresponding author: Sergio Lociuero, PhD, Chief Scientific Officer

BV100 displays potent *in vivo* activity towards *A. baumannii* with a broad MIC range in neutropenic lung models of infection. The safety and tolerability of BV100, a novel intravenous formulation of rifabutin, is currently investigated in Phase I clinical studies.

ePoster #1003: Comparison of pharmacokinetics of oral rifabutin with intravenous BV100 in rat

Poster Session S163: 5a. Mechanisms of action, new compounds, preclinical data & pharmacology of antibacterial agents

Corresponding author: Sergio Lociuero, PhD, Chief Scientific Officer

Systemic rifabutin exposures increase proportionally to the dose after single oral administration to rats. The oral bioavailability in rat was in the range of 40-50%. A single IV dose of 25 mg/kg BV100 (rifabutin for infusion) resulted in low clearance and high volume of distribution.

ePoster #1007: Rifabutin synergy / antagonism with SoC antibiotics in *Acinetobacter baumannii*

Poster Session S163: 5a. Mechanisms of action, new compounds, preclinical data & pharmacology of antibacterial agents

Corresponding author: Sergio Lociuo, PhD, Chief Scientific Officer

Rifabutin synergizes with cefiderocol and colistin against highly resistant *A. baumannii* strains

ePoster #3818: Pharmacokinetics and Pharmacodynamics of BV100 in neutropenic mouse lung infection models

Poster Session S164: 5b. Pharmacokinetics/pharmacodynamics of antibacterial drugs & therapeutic drug monitoring

Corresponding author: Glenn E. Dale, PhD, Chief Development Officer

BV100 showed linear pharmacokinetics and was dose proportional. A population PK model was developed and showed that the main driver for efficacy of BV100 towards *A. baumannii* is primarily the *f*AUC/MIC ratio. For CRAB isolates a 2-log kill can be achieved. The safety and tolerability of an intravenous formulation of BV100 is currently evaluated in Phase I clinical studies.

BVL-GSK098 for multidrug-resistant Tuberculosis:

Oral Presentation #0854: How to turn an old drug into a potent, rapidly bactericidal and safer drug: Clinical Candidate BVL-GSK098 overcomes resistance to and potentiates the activity of ethionamide by boosting ethionamide bioactivation in *Mycobacterium tuberculosis*. (BVL-GSK098)

Oral Presentation Session 2: Bacterial infection & disease

Presenter: Michel Pieren, PhD, Clinical Project Manager

Timing: Sunday, July 11, 2021; 10:45-12.15 pm CEST

BVL-GSK098 acts on a novel bioactivation pathway of ethionamide, potentiates the activity of and overcomes resistance to ethionamide in *M. tuberculosis* including MDR clinical isolates

Oral Presentation #1280: Bactericidal activity of ethionamide alone and boosted by BVL-GSK098 in an acute murine model of tuberculosis. (BVL-GSK098)

Oral Presentation Session 5: New antibacterial agents, PK/PD & stewardship

Presenter: Thomas Maitre, MD, PhD student, Cimi Paris, Sorbonne Université, France

Timing: Sunday, July 11, 2021; 19:15-20:45 pm CEST

BVL-GSK098 potentiates the activity of low dose ethionamide and makes the combination as rapidly bactericidal as isoniazid in a mouse infection model

ePoster #863: Therapeutic efficacy of ethionamide boosted with BVL-GSK098 in an acute murine model of tuberculosis

Poster Session S163 : 5a. Mechanisms of action, new compounds, preclinical data & pharmacology of antibacterial agents

Corresponding author: Joaquin Rullas, PhD, Manager In vivo Biology, GSK, Spain

Clinical candidate BVL-GSK098 at just 0.1 mg/kg boosted *in vivo* the therapeutic efficacy of ethionamide (Eto) against *M. tuberculosis* enabling an Eto dose reduction of at least 4-fold

Data presented from **BVL-GSK098** project comes from the collaboration between BioVersys and **GSK** that is supported by the **IMI2 AMR Accelerator** from the European Union (**TRIC-TB project**). The BVL-GSK098 program originates from BioVersys and its partners at the University of Lille and Pasteur Institute Lille, France. As special mention goes to our collaborators at the University of Sorbonne, laboratory of Professor Nicolas Veziris, for their contribution to recent preclinical studies.

The **TRIC-TB project** has received funding from the Innovative Medicines Initiative 2 Joint Undertaking (JU) under grant agreement No 853800. The JU receives support from the European Union's Horizon 2020 research and innovation programme and EFPIA.

TRIC-TB Project – the objective is to progress clinical candidates that potentiate the efficacy of and reverse the resistance to the anti-tubercular pro-drug ethionamide (Eto). The World Health Organization (WHO) considers Eto a crucial pillar of TB treatment, especially against MDR (multidrug-resistant) and XDR (extensively drug-resistant) strains. Our “booster” molecules act on novel bacterial transcription regulator targets, resulting in an increase of Eto efficacy by at least three-fold in vivo. This allows the use of lower efficacious doses of Eto in human anti-tuberculosis treatments and with a resultant reduction in dose dependent adverse effects in TB patients. Furthermore, data shows that the small molecules overcome pre-existing resistance mechanisms against Eto in *Mycobacterium tuberculosis* by employing novel bioactivation pathways for Eto, thus increasing the level of bioactivation. TRIC-TB has the potential to deliver a novel, fast acting TB agent potentially replacing Isoniazid as first line TB therapy. Follow TRIC-TB on Twitter @TRIC_TB

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BV200 for *S. aureus* including Methicillin-Resistant *Staphylococcus aureus* (MRSA):

Oral Presentation #2550: Inhibition of AgrA-mediated virulence factor expression in MRSA: a viable, non-lethal, treatment option. (BV200)

Oral Presentation Session 5: New antibacterial agents, PK/PD & stewardship

Presenter: Olivier Defert, PhD, Head of Research and External Partnerships

Timing: Saturday, July 10, 2021; 17:15-17:25 pm CEST

Inhibition of the quorum-sensing target Agr-A by small molecules decreases expression of virulence factors of *S. aureus* and significantly reduces mean lesion size in an in vivo murine model of dermonecrosis without affecting CFUs.

Research reported in this presentation is supported by CARB-X. CARB-X's funding for this project is sponsored by the Cooperative Agreement Number IDSEP160030 from ASPR/BARDA and by an award from Wellcome Trust. The contents are solely the responsibility of the authors and do not necessarily represent the official views of the HHS Office of the Assistant Secretary for Preparedness and Response, Wellcome Trust, or other CARB-X funders.

Meet the presenters and ECCMID attendees from BioVersys:



Sergio Lociuoro PhD
CSO



Olivier Defert PhD
Head Research and
External Partnerships



Michel Pieren PhD
Clinical Project Manager



Marc Gitzinger PhD
CEO

About BioVersys

BioVersys AG is a privately-owned clinical stage Swiss pharmaceutical company focusing on research and development of small molecules acting on novel bacterial targets with applications in antimicrobial resistance (AMR) and targeted microbiome modulation. With the company's award-winning TRIC technology we can overcome resistance mechanisms, block virulence production and directly affect the pathogenesis of harmful bacteria, towards the identification of new treatment options in the antimicrobial and microbiome fields. By this means, BioVersys addresses the high unmet medical need for new treatments against life-threatening resistant bacterial infections and bacteria-exacerbated chronic inflammatory microbiome disorders. Our most advanced research and development programmes address nosocomial infections of *Acinetobacter baumannii* (BV100, Phase 1), and tuberculosis (BVL-GSK098, Phase 1) in collaboration with GlaxoSmithKline (GSK) and a consortium of the University of Lille. BioVersys is located in the Technologiepark in the thriving biotech hub of Basel.

BioVersys contacts

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About the Innovative Medicines Initiative

The Innovative Medicines Initiative (IMI) is working to improve health by speeding up the development of, and patient access to, the next generation of medicines, particularly in areas where there is an unmet medical or social need. It does this by facilitating collaboration between the key players involved in healthcare research, including universities, pharmaceutical companies, other companies active in healthcare research, small and medium-sized enterprises (SMEs), patient organizations, and medicines regulators. This approach has proven highly successful, and IMI projects are delivering exciting results that are helping to advance the development of urgently needed new treatments in diverse areas.

IMI is a partnership between the European Union and the European pharmaceutical industry, represented by the European Federation of Pharmaceutical Industries and Associations (EFPIA). Through the IMI2 programme, IMI has a budget of €3.3 billion for the period 2014-2020. Half of this comes from the EU's research and innovation programme, Horizon 2020. The other half comes from large companies, mostly from the pharmaceutical sector; these do not receive any EU funding, but contribute to the projects 'in kind', for example by donating their researchers' time or providing access to research facilities or resources.

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About CARB-X

CARB-X (Combating Antibiotic-Resistant Bacteria Biopharmaceutical Accelerator) is a global non-profit partnership dedicated to supporting early development antibacterial R&D to address the rising threat of drug-resistant bacteria. CARB-X is led by Boston University and funding is provided by the Biomedical Advanced Research and Development Authority (BARDA), part of the Office of the Assistant Secretary for Preparedness and Response (ASPR) in the US Department of Health and Human Services; the Wellcome Trust, a global charity based in the UK working to improve health globally; Germany's Federal Ministry of Education and Research (BMBF); the UK Department of Health and Social Care's Global Antimicrobial Resistance Innovation Fund (GAMRIF) funded by the UK Government Department of Health and Social Care (DHSC); the Bill & Melinda Gates Foundation, and with in-kind support from National Institute of Allergy and Infectious Diseases (NIAID), part of the US National Institutes of Health (NIH) within the US Department of Health and Human Services. CARB-X is investing up to US\$480 million from 2016-2022 to support innovative therapeutics, preventatives and rapid diagnostics. CARB-X funds only projects that target drug-resistant bacteria highlighted on the CDC's Antibiotic Resistant Threats list, or the Priority Bacterial Pathogens list published by the WHO, with a priority on those pathogens deemed Serious or Urgent on the CDC list or Critical or High on the WHO list. CARB-X is headquartered at Boston University School of Law. <https://carb-x.org/>. Follow us on Twitter @CARB_X