

3base® Kit for Antimicrobial Resistance Shows High Detection Rate

- Genetic Signatures' *EasyScreen*™ Detection Kit for Antimicrobial Resistance (AMR) shown to have excellent sensitivity and specificity by an independently conducted study
- The authors conclude that the kit's "short turnaround time and simplicity makes it suitable for routine use in most clinical microbiology laboratories"
- AMR is considered one of the leading public healthcare threats by the World Health Organisation and associated with over 5 million death per year worldwide

Genetic Signatures [ASX:GSS], a global molecular diagnostics company, is pleased to report that an independently-conducted study evaluating Genetic Signatures' *EasyScreen*™ ESPL/CPO Detection Kit has been published in a peer-reviewed journal. This study demonstrated that Genetic Signatures' *EasyScreen*™ ESPL/CPO Detection Kit has excellent sensitivity and specificity for detection of the genes that are responsible for the majority of antibiotic resistance in microbial strains.

The paper, entitled "*Evaluation of the EasyScreen™ ESBL/CPO Detection Kit for the Detection of β -Lactam Resistance Genes*", has been published in the international, peer-reviewed journal *Diagnostics*, and can be accessed at <https://www.mdpi.com/2075-4418/12/9/2223>. In this study, the investigators evaluated the ability of Genetic Signatures' *EasyScreen*™ ESPL/CPO Detection Kit to detect 15 different β -lactamase genes in different gram-negative bacteria, and the colistin-resistance gene *mcr-1* from 341 bacterial isolates. β -lactam antibiotics include penicillins, cephalosporins and carbapenems and are thus among the most frequently prescribed antibiotics used to treat bacterial infections due their safety, reliable killing properties and clinical efficacy. However, their utility is coming under threat due to the proliferation of an enzyme called β -lactamase in multidrug-resistant strains of gram-negative bacteria that are able to inactivate these antibiotics.

The authors of this study concluded that "irrespective of the host bacteria, the *EasyScreen*™ ESBL/CPO Detection Kit showed excellent biological performance (sensitivity and specificity) for the five most common carbapenemases (β -lactamase enzymes)". Furthermore, the kit was very effective at identifying other antimicrobial resistance genes that are not well detected by most other molecular assays. The authors commented that the kit's "short turnaround time and simplicity makes it suitable for routine use in most clinical microbiology laboratories".

"We are delighted to see the performance of our *EasyScreen*™ ESBL/CPO Detection Kit independently validated in this peer-reviewed publication," said John Melki, Chief Executive Officer of Genetic Signatures. "These data reinforce results from a previous published, independent study¹ which reported that our *EasyScreen*™ ESBL/CPO Detection Kit provided the highest positive predictive value (PPV), with 100% sensitivity, of the four commercially available kits tested. Antimicrobial resistance (AMR) has been declared one of the top 10 global public health threats facing humanity by the World Health Organisation. A recent analysis estimated that AMR is associated with over 5 million deaths per year worldwide², which is almost 10 deaths every

¹ Del Bianco et al (2019): <http://doi.org/10.3390/microorganisms7120704>

² Antimicrobial Resistance Collaborators (2022), *The Lancet*: [https://doi.org/10.1016/S0140-6736\(21\)02724-0](https://doi.org/10.1016/S0140-6736(21)02724-0) Page 1

minute. Our **3base®** technology is ideally suited for the simple and reliable detection of different gene variants that can be responsible for AMR. This recent study further highlights the important role our kit could have in the early detection of AMR infections, both from a performance perspective and from its ease of use.”

Genetic Signatures' *EasyScreen™* ESBL/CPO Detection Kit is registered for sale in Australia by the Therapeutic Goods Administration (TGA) and also has CE-IVD marking.

For further information, see our website (www.geneticsignatures.com) or contact us as below:

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About Genetic Signatures Limited: Genetic Signatures is a specialist molecular diagnostics (MDx) company focused on the development and commercialisation of its proprietary platform technology, 3base®. Genetic Signatures designs and manufactures a suite of real-time Polymerase Chain Reaction (PCR) based products for the routine detection of infectious diseases under the *EasyScreen™* brand. Genetic Signatures' proprietary MDx 3base® platform technology provides high-volume hospital and pathology laboratories the ability to screen for a wide array of infectious pathogens, with a high degree of specificity, in a rapid throughput (time-to-result) environment. Genetic Signatures' current target markets are major hospital and pathology laboratories undertaking infectious disease screening. Genetic Signatures is leveraging strong COVID-19 related sales of its *EasyScreen™* respiratory kits and the growing interest in its gastroenteritis products to further commercialise its 3base® technology to rapidly and cost effectively screen for a wide array of infectious pathogens including antibiotic resistant bacteria, sexually transmitted infections, meningitis and mosquito borne viral diseases.