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HARMONISED MONITORING OF ANTIMICROBIAL RESISTANCE SURVEILLANCE IN HUMAN, VETERINARY AND FOODSTUFFS - *Salmonella, E. coli* and *Campylobacter* Isolates

Thermo Scientific™ Sensititre™ System

SmartNotes

Did you know?

Antimicrobial Resistance (AMR) is a serious concern and of increasing importance. The inappropriate use of antimicrobial agents in humans and animals is the leading cause of this growing and dangerous issue, which is now emerging as a public health threat. This is why the European Parliament, including its agencies: the European Centre for Disease Prevention and Control (ECDC), the European Food Safety Authority (EFSA) and the European Medicines Agency (EMA), have identified the need to establish a common strategy in the fight against AMR.

There are several official documents that have strengthened the 'One Health Initiative' perspective underlining the need for the surveillance, harmonised monitoring and reporting of AMR to assess and determine the trend and sources of AMR in bacteria. The use of antimicrobial agents in food-producing animals is a potential risk for selection and dissemination of AMR to humans from animals and food (zoonoses).

On 7 July 2011, the EFSA adopted a scientific opinion on the public health risks of bacterial strains producing extended-spectrum β-lactamases (ESBL) and/or AmpC β-lactamases (AmpC) in food and food-producing animals. On 14 June 2012, the EFSA published a scientific report on technical specifications of the harmonised monitoring and reporting of antimicrobial resistance in *Salmonella, Campylobacter* and indicator commensal *Escherichia coli* and *Enterococcus* spp. bacteria transmitted through food. On 5 October 2012, the EFSA published a scientific report on technical specifications on the harmonised monitoring and reporting of antimicrobial resistance in methicillin-resistant *Staphylococcus aureus* (MRSA) in food-producing animals and food.

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These and other regulations, commission decisions, commission regulations, scientific opinions and agency reports concluded that in view of the increasing public health concern, **it is necessary to use harmonised methods and epidemiological cut-off values in order to ensure the comparability of data over time**[1].

The method of choice is the broth microdilution method performed according to the methods described by the European Committee on Antimicrobial Susceptibility Testing (EUCAST) and the Clinical and Laboratory Standards Institute (CLSI), and is accepted as the international reference method (ISO standard 20776-1:2006).

Surveillance objectives for the monitoring of antimicrobial resistance in human clinical isolates of *Salmonella* and *Campylobacter* at the EU level were agreed upon within the Food- and Waterborne Diseases and Zoonoses (FWD) network[2].

How can you meet these new recommendations?

The Thermo Scientific Sensititre System utilizes true minimum inhibitory concentration (MIC) results, which are essential to detecting emerging antimicrobial resistance. True MIC results are also the best measure of antibacterial effect, which can assist with therapeutic choices and promote overall better patient care and facilitate comparison of data over time.

- **Accuracy.** The Sensititre System utillizes the proven methodology (broth microdilution) with a portfolio of Sensititre plates specifically designed for surveillance programs as used by NARMS, USDA, CDC, DANMAP, Alexander Project, Protekt, Sentry, Libra, EFSA and others.
- **Compliance.** Sensititre plates are available for extended-spectrum β-lactamases (ESBL) and/or AmpC β-lactamases (AmpC), *Salmonella, Campylobacter* and indicator commensal *Escherichia coli, Enterococcus* spp. and methicillin-resistant *Staphylococcus aureus* (MRSA), directly supporting the requirements of EFSA for surveillance and reporting.
- **Industry-recognized.** System of choice by many pharmaceutical companies for new drug development and for use in clinical trials, providing the most up-to-date portfolio of antimicrobials for wider treatment options and improved patient care.
- **Customization.** Access more than 240 antimicrobials for AMR detection in humans and animals, with more than 40 dedicated exclusively to the veterinary sector, with Sensititre custom plates designed to meet exact formulary needs.

With a complete portfolio of products to support the 'One Health' approach, the Sensititre System is your partner in the fight against AMR.

To learn more, visit **thermofisher.com/AST**

[1] Comission implementing Decision 2013/652/EU of 12 November on the monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria. OJ L 303, 14.11.2013, p. 26-39 *

[2] European Centre for Disease Prevention and Control. EU protocol for harmonised monitoring of antimicrobial resistance in human Salmonella and Campylobacter isolates – June 2016. Stockholm:ECDC; 2016

* This specification includes a revised list of antimicrobials to monitor, updated ECOFF values, minimum inhibitory concentration (MIC) ranges to be tested, methods and specific monitoring of extended-spectrum-beta-lactamase-producing bacteria.

Find out more at **thermofisher.com/AST**

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