

## **Veterinary Committee on Antimicrobial Susceptibility Testing (VetCAST)**

VetCAST is a EUCAST subcommittee dealing with all aspects of antimicrobial susceptibility testing of bacterial pathogens of animal origin and animal bacteria with zoonotic potential. The subcommittee will operate within the format and structure of EUCAST (The European Committee on Antimicrobial Susceptibility Testing).

### **VetCAST vision and strategy**

The vision of VetCAST is to contribute to global standards for antimicrobial susceptibility testing of bacterial pathogens of animal origin. In order to accomplish this ambitious mission, it is of paramount importance to obtain official recognition by EMA, ECDC and EFSA. The ultimate goal of VetCAST is to become the EU scientific-based operational body of EMA/CVMP for definition/approval veterinary-specific breakpoints. Examples of services that VetCAST could provide to EMA/CVMP include:

- To provide advice on the type and quality of the MIC, pharmacokinetic (PK) and clinical data needed for setting clinical breakpoints
- To define clinical MIC breakpoints for new veterinary antimicrobial agents
- To revise breakpoints for generic drugs
- To advice on the bacterial spectrum of veterinary antimicrobial agents

### **The remit of VetCAST is**

- To establish a science-based committee that will cooperate with European professionals in veterinary medicine, the European Medicines Agency (EMA), the European Centre for Disease prevention and Control (ECDC) and the European Food Safety Authority (EFSA);
- To determine antimicrobial breakpoints specific to the veterinary field;
- To harmonize veterinary antimicrobial susceptibility testing in the European Union (EU);
- To provide education on antimicrobial susceptibility testing and antimicrobial therapy in the veterinary field in Europe;
- To initiate and coordinate EU research aimed at filling the current gaps in veterinary antimicrobial susceptibility testing:
  - Missing or insufficient veterinary specific breakpoints (bacterial species-, animal host- and infection-specific breakpoints)
  - Optimized methods for antimicrobial susceptibility testing of bacterial pathogens of animal origin and zoonotic bacteria that can affect humans
- To ensure that antimicrobial susceptibility testing protocols and interpretive criteria are freely accessible online through the EUCAST website.

## Background

There is increasing concern about the public health and animal welfare consequences of antimicrobial resistance in bacteria from animal sources. Appropriate use of antimicrobial agents in veterinary medicine is one of the key areas of the EU policy against antimicrobial resistance, and various initiatives have been taken by a variety of national, European and international bodies to promote prudent use (EPRUMA 2008, FVE 2012, OIE 2012, WHO 2014, EFSA 2014, EMA 2014, EU Commission 2014). Among the various measures to improve prudent antimicrobial use in the veterinary sector, the importance of antimicrobial susceptibility testing and the need to promote bacterial diagnostics and susceptibility testing among veterinarians have been advocated by numerous international and national guidelines and recommendations (FVE 2012, OIE 2012, WHO 2014, EMA 2014, EUCAST).

However, the current quality standards for antimicrobial susceptibility testing of veterinary pathogens are far from being optimal or complete, making the predictive value of susceptibility data in veterinary diagnostics questionable. The absence of sufficient animal species-specific breakpoints affects the possibility for veterinary practitioners to prescribe antibiotics rationally, because there is no basis for determining whether a bacterial strain is clinically resistant or not

The CLSI Veterinary Antimicrobial Susceptibility Testing (VAST) committee has been proactive in defining clinical breakpoints for new and generic veterinary antimicrobial agents. However, these are not always determined according to EUCAST methodology, which highlights the need for a European committee to contribute to harmonization.

Currently, for many veterinary antimicrobial/animal pathogen combinations, no information is available on MIC and zone diameter distributions, and the available data on MIC distributions are to some extent biased by the lack of a prospective sampling strategy. Moreover, in Europe susceptibility testing methods vary greatly by country and by laboratory and scientifically founded animal species-, bacterial species- and infection-specific interpretive criteria are often lacking. Given the current concerns about the emergence of and trends in antimicrobial resistance in animals, there is an urgent need for a harmonized and evidence-based approach in Europe towards the methods to be used, and reliable interpretive criteria for optimum and controlled antibiotic prescriptions. Moreover, one of the current problems is the lack transparency. Preferably the breakpoints for veterinary antimicrobial agents should be freely accessible and the rationale for the breakpoints should be based on independent scientific assessment of MIC, PK and clinical data. A formal advisory body on clinical breakpoints is lacking for the veterinary unit of EMA and CVMP.

In order to highlight and meet these needs, the VetCAST committee was established on the 7<sup>th</sup> of November 2014 by a group of veterinary microbiologists and pharmacologists. On the 13<sup>th</sup> of November 2014, both the ESCMID Executive Committee (EC) and EUCAST have accepted VetCAST as a formal EUCAST Subcommittee. Subsequently, the ESCMID EC encouraged VetCAST to submit an application for the creation of an ESCMID Study Group (ESG), which will provide initial financial support for international activities. The application for an ESCMID Study Group for Veterinary Microbiology (ESGVM) was approved by the ESCMID EC on the 8<sup>th</sup> of December 2014, and the inaugural meeting of ESGVM took place at ECCMID on the 26<sup>th</sup> of May 2015. Establishment of

ESGVM has been formally supported by 46 European experts from 18 European countries to coordinate future activities in the broader area of veterinary microbiology. These activities include definition of interpretive criteria for veterinary antimicrobial susceptibility tests as well as organization of workshops and symposia on this topic.

The objectives of ESGVM are:

- To contribute to advancement and harmonization of methods for diagnosis and antimicrobial susceptibility testing of veterinary pathogens
- To foster research aimed to optimize formulation and dosing regimens of veterinary anti-infectives to improve clinical efficacy and reduce resistance development
- To support and divulgate antimicrobial stewardship and best infection control practices in veterinary medicine
- To set the basis for the creation of a European network for surveillance of zoonotic agents in animal populations and for early detection of new or exotic infectious agents using animals as sentinels of human disease
- To provide a joint European forum for veterinary microbiologists working in research, public health and animal healthcare, including both public and private organizations
- To promote the 'One-Health' concept by facilitating joint research and training collaborations between medical and veterinary microbiologists within areas of common interests (e.g. zoonoses)
- To offer advice to European regulatory agencies (EMA, EFSA and ECDC) on topics related to control and prevention of veterinary and zoonotic infections
- To provide actions in order to promote awareness of neglected (underdiagnosed) zoonotic infections in human medicine

#### References:

- European Platform for the Responsible Use of Medicines in Animals (EPRUMA), 2008. Best-practice framework for the use of antimicrobials in food-producing animals
- Activity Report of the Federation of Veterinarians in Europe (FVE), 2012-2014
- Terrestrial Animal Health Code, World Organization for Animal Health (OIE), 2014
- Draft Global Action plan on Antimicrobial Resistance, World Health Organization (WHO) 2014
- European Food Safety Authority. EFSA Explain Antimicrobial Resistance <http://www.efsa.europa.eu/en/corporate/doc/factsheetamr.pdf>, 2014
- European Medicines Agency (EMA) [http://www.ema.europa.eu/ema/index.jsp?curl=pages/special\\_topics/general/general\\_content\\_000439.jsp](http://www.ema.europa.eu/ema/index.jsp?curl=pages/special_topics/general/general_content_000439.jsp)
- European Commission, 2014. Action Plan Against the rising threats from Antimicrobial Resistance.
- European Committee on Susceptibility Testing (EUCAST) [www.eucast.org](http://www.eucast.org)

**VetCAST Steering Committee:**

**Chair:** Prof. Dik Mevius,

Department of Bacteriology and TSEs, Central Veterinary Institute of Wageningen UR, Lelystad, the Netherlands

**Secretary:** Dr. Peter Damborg,

Department of Veterinary Disease Biology, University of Copenhagen, Denmark

**Data Manager:** Dr. Kees Veldman, Department of Bacteriology and TSEs, Central Veterinary Institute of Wageningen UR, Lelystad, the Netherlands

**Pharmacologist:** Prof. Pierre Louis Toutain (emeritus), Department Pharmacologie-Thérapeutique, l'Ecole Nationale Vétérinaire de Toulouse, France

**VetCAST members:**

**Pharmacologists:**

Dr. Ludovic Pelligand, Prof. Peter Lees (emeritus)

Department of Comparative Biomedical Sciences, Royal Veterinary College, London, United Kingdom

Prof. Alain Bousquet-Melou,

Department Pharmacologie-Thérapeutique, l'Ecole Nationale Vétérinaire de Toulouse, France

**Veterinary microbiologists:**

Dr. Jean Yves Madec, Dr. Marisa Haenni,

Agence Nationale de Sécurité Sanitaire ANSES – Lyon, France

Prof. Luca Guardabassi

Department of Veterinary Disease Biology, University of Copenhagen, Denmark

Dr. Kees Veldman

Department of Bacteriology and TSEs, Central Veterinary Institute of Wageningen UR, Lelystad, the Netherlands

Dr. Jürgen Wallmann, Dr. Heike Kaspar

Federal Office of Consumer Protection and Food Safety, Berlin, Germany

Andrea T. Feßler, PhD, Prof. Stefan Schwarz (advisor)

Institute of Farm Animal Genetics, Friedrich Loeffler Institute, Mariensee, Germany

Prof. Vincent Perreten

Institute of Veterinary. Bacteriology, Bern University, Switzerland

Dr. Christina Greko, Dr. Björn Bengtsson

Department of Animal Health and Antimicrobial Strategies, National Veterinary Institute, Sweden

Dr. Antonio Battisti

Istituto Zooprofilattico Sperimentale delle Regioni Lazio e Toscana, Rome, Italy

Annet Heuvelink, GD Animal Health Laboratory, the Netherlands.

**Veterinary clinicians:**

Lisbeth Rem Jessen, University Hospital for Companion Animals, University of Copenhagen, Denmark

Christophe Hugnet, Clinique Vétérinaire des Lavandes, La Begude De Mazenc, France

**Liaison with CLSI as observers:**

Dr. Shabbir Simjee, Elanco Animal Health, Basingstoke, United Kingdom