

VETCAST/EUCAST, Workshop

12-15 September 2017 - Toulouse, France

With the support of the European College of Veterinary Pharmacology and Toxicology (ECVPT) & the ESCMID Study Group for Veterinary Microbiology (ESGVM)

Antimicrobial Susceptibility Testing (AST) with VETCAST breakpoints: quantitative methods

Course coordinators:

Pierre-Louis Toutain & Didier Concordet (Ecole Nationale Vétérinaire de Toulouse & INRA)
Ludovic Pelligand (Royal Veterinary College, London).

Speakers and Tutors:

Alain Bousquet-Melou (ENVT & INRA Toulouse, France and ECVPT)
Didier Concordet (ENVT & INRA Toulouse, France)
Peter Damborg (University of Copenhagen, Denmark and VETCAST)
Aude Ferran (ENVT & INRA Toulouse, France and ECVPT)
Lena Friberg (Uppsala University, Sweden)
Peter Lees (Royal Veterinary College, University of London, UK and VETCAST)
Marilyn Martinez (CLSI/VAST and FDA, USA)
Dik Mevius (University of Lelystad, NL and VETCAST/ Chair)
Hilde Moyaert (CEESA)
Ludovic Pelligand (Royal Veterinary College, University of London, UK, and VETCAST & ECVPT)
Pierre-Louis Toutain (ENVT & INRA Toulouse, France and VETCAST & ECVPT)
John Turnidge (University of Adelaide, Australia and EUCAST)
Kees Veldman (University of Wageningen, NL and VETCAST)

Expected attendees:

Day 1: 12th September (general introduction)

- Professional microbiologists and pharmacologists
- Employees of veterinary pharmaceutical companies, contract research organizations and veterinary diagnostic laboratories
- Members of Regulatory Authorities
- Residents of the European College of Veterinary Pharmacology and Toxicology (ECVPT), the European College of Veterinary Public Health (ECVPH) and the European College of Veterinary Internal Medicine (ECVIM)

Days 2-4: 13th to 15th September (modelling days)

- The same persons as for Day 1 but also possessing minimal skills in data analysis and modelling (e.g. with Phoenix®) and with a reasonable knowledge of pharmacokinetics, pharmacodynamics and statistics.

Program

Time	Activity	Activity description	Academic Staff
DAY1 Tuesday 12 September 2017: overview conference			
09:00-9:15		Meet & Greet – An overview of the symposium	Pierre-Louis Toutain/Dik Mevius
09:15-10:00	Lecture 1	Current standards for AST in veterinary medicine	Dik Mevius
10:00-10:30	Lecture 2	Introduction to VETCAST: objectives, current achievements and future plans	Peter Damborg
10:30-11:00	Morning break		
11:00-11:45	Lecture 3	CLSI/VAST approaches and experiences	Marilyn Martinez
11:45-12:30	Lecture 4	Tools for testing: present and future (including innovations in rapid bedside, genetic and other tests)	Alex van Belkum (Biomerieux)
12:30-13:30	Lunch (<i>Biomerieux</i>)		
13:30-14:15	Lecture 5	The setting of clinical breakpoints by VETCAST	Pierre-Louis Toutain
14:15-15:00	Lecture 6	Overview on determination of ECOFF, PK/PD breakpoints and clinical cut-offs	Pierre-Louis Toutain/Alain Bousquet-Melou/John Turnidge
15:00-15:30	Afternoon break		
15:30-16:00	Lecture 7	CEESA position and questions	Hilde Moyaert
16:00-17:00		Open questions and discussion with stakeholders	Peter Lees /Dik Mevius (moderators)
DAY2 – Wednesday 13 September 2017: ECOFF and introduction to PK/PD and clinical cut-offs			
9:00-9:30	Lecture 8	MIC wild type distributions and epidemiological cut-off values: human and veterinary perspectives	John Turnidge/Kees Veldman
09:30-10:30	Lecture 9	Methods for defining the wild type distribution (determining the ECOFF)	John Turnidge
10:30-11:00	Morning break		
11:00-12:15	Exercise 1	ECOFF: practical exercise	John Turnidge
12:15-13:45	Lunch		
13:45-14:45	Lecture 10	PK/PD indices and experimental <i>in vitro</i> and <i>in vivo</i> approaches: an overview	Alain Bousquet-Melou/Aude Ferran
14:45-15:05	Lecture 11	Determination of potency indices in differing matrices	Peter Lees
15:05-15:35	Lecture 12	Clinical trials and clinical cut-off for AST: an overview and current issues	Pierre-Louis Toutain
15:35-16:05	Lecture 13	Clinical cut-off: the CLSI approach (Maxdif and Window expert system tools)	Marilyn Martinez
16:05-16:30	Afternoon Break		
16:30-17:00	Lecture 14	Statistics associated with validation of tests and ROC curves	Didier Concordet

17:00-18:00	Exercise 2	Computation of specificity and selectivity of tests; building a ROC curve; computation of positive and negative predictive values and diagnostic gain of tests	Didier Concordet
Workshop diner (Biomérieux)			
DAY3 – Thursday 14 September 2017: Population modelling and PK/PD cut-offs			
8:45-9:30	Lecture 15	Population modelling: an introduction	Pierre-Louis Toutain and Didier Concordet
9:30-10:30	Exercise 3	Step-by-step building of a population model with Phoenix® to estimate typical PK values and random components to establish PK/PD cut-offs and computation of an individual AUC using a Bayesian approach for the computation of a clinical cut-off	Pierre-Louis Toutain, Didier Concordet and tutors
10:30-11:00	Morning break		
11:00-12:00	Exercise 3	Continued	
12:00-13:30	Lunch		
13:30-15:00	Exercise 4	Simulation of dosage regimens using the population model and determination of corresponding PK/PD cut-offs	Pierre-Louis Toutain and tutors
15:00-15:30	Afternoon break		
15:30-16:30	Exercise 4	Continued	Pierre-Louis Toutain and tutors
16:30-18:00	Exercise 5	Monte Carlo Simulations using Oracle Crystal Ball and computation of dosage regimens with Target Attainment Rates	Ludovic Pelligand
DAY4 –Friday 15 September 2017: PK/PD and Clinical cut-offs & clinical breakpoint			
8:30-9:15	Lecture 16	How to analyze classical killing curves to compute critical values of PK/PD indices (Emax model...)	Lena Friberg
9:15-10:00	Lecture 17	How to select PK/PD indices and estimate target values using semi-mechanistic models (demonstration)	Lena Friberg
10:00-10:30	Morning break		
10:30-11:15	Lecture 18	Classical PK/PD indices re-visited by semi-mechanistic models (the case of long-acting drugs and formulations) and future trends in human medicine	Lena Friberg
11:15-12:00	Lecture 19	Classification and regression tree analysis and logistic regression	Didier Concordet
12:00-13:30	Lunch		
13:30-14:15	Exercise 6	A logistic regression analysis with Phoenix®	Pierre-Louis Toutain/Ludovic Pelligand
14:15-15:00	Exercise 7	A regression tree analysis with R	Didier Concordet
15:00–15:30	Afternoon break		
15:30-16:00	Lecture 20	The VETCAST SOP and Excel® sheet for PK data collection: discussion and update	Moderators : Ludovic Pelligand, Peter Lees, Pierre-Louis Toutain
16:00-16:45		End of the workshop and debriefing	Moderators : Pierre-Louis Toutain, Peter Lees

Venue:

HOTEL MERCURE TOULOUSE CENTRE COMPANS

8 esplanade Compans-Caffarelli – Boulevard Lascrosses – 31000 Toulouse France

Accommodation in this hotel is offered with specially negotiated rates (146€/night+breakfast)

Airport Toulouse-Blagnac:

Toulouse-Blagnac international airport is 8 km west of Toulouse. The city center is easily reached by the airport shuttle service Tisseo (every 20 minutes, every day from 5.30 a.m. to 12.15 p.m.). The first stop Congress Centre Compans-Caffarelli, is just in front of the hotel.

Workshop registration:Online registration will be open from April 28th until July 31stContact: Valérie Defforge: e-mail: v.defforge@envt.frFor further information please e-mail Pierre-Louis Toutain: pltoutain@wanadoo.fr**Fees**

	Students (ECVPT, PhD program etc.)	Academics/Agencies	Private companies
Day 1 Conference	100	200	200
3-day workshop	300	600	1500
Total for 4 days (1 to 4)	400	800	1700

Registration fees include lunch and coffee breaks but **not** dinners and accommodation. For those attending the whole Workshop (days 1 to 4),

The [Workshop dinner on Wednesday 13 September](#) will be sponsored by .



On request, a letter of invitation can be provided. This may assist potential participants in raising travel funds, course fees or obtaining a visa.

For those attending the whole Workshop

- The overall objective of Workshop is to give attendees a broad overview of the main tools (basic and more advanced) that will be used by VETCAST to determine clinical breakpoints.
- The Workshop is intended to individuals already possessing a basic understanding of PK and PD concepts, including basic population PK analysis and expecting to be involved in some aspects of data analysis to establish clinical breakpoints.
- The workshop will comprise a series of lectures and practical exercises that the delegates will have to solve using two software programs (Phoenix/WinNonlin® and Oracle Crystal ball)
- A few days before the Workshop, the participants will be provided with educational licenses to download, if required, the Phoenix® and Crystal ball software programs on their personal laptop (that they will bring to the Workshop). The participants are encouraged to familiarize themselves with these software before attending the Workshop.
- The attendees are required to have appropriate skills in using Excel® and to be familiar with basic statistical methods. Attendees do not have to be skilled mathematicians to benefit from the course but they will be expected to work with exponential equations.
- All test exercises have been carefully designed to allow attendees to proceed on a step-by-step progressive manner. Tutors will be on hand to advise and assist if required.