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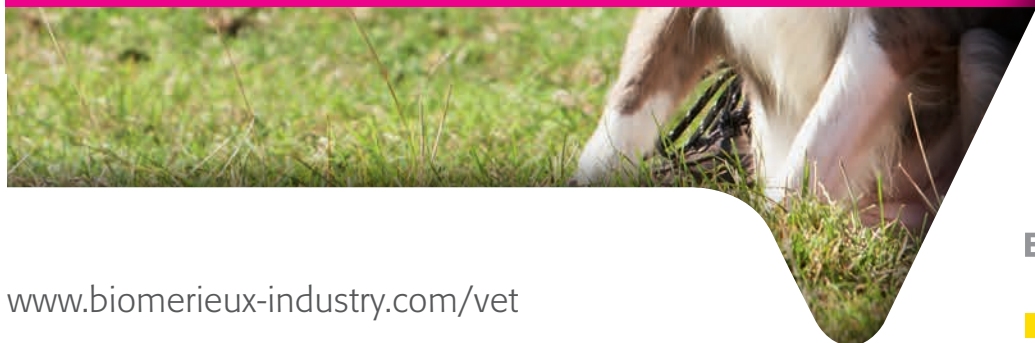
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BIOVETERINARY

THE INTERNATIONAL NEWSLETTER FOR BIOMÉRIEUX **VETERINARY DIAGNOSTIC** PARTNERS



ANTIBIOTIC RESISTANCE:
TOWARDS **BETTER** MANAGEMENT



www.biomerieux-industry.com/vet



→ Nicolas CARTIER

Corporate Vice-President
Industrial Microbiology

Welcome to this first issue of bioVeterinary, the international newsletter for the veterinary diagnostics partners.

We made the choice to dedicate this first issue to identification and antibiotic resistance detection.

This is our way of showing you how much we consider antibiotic resistance to be one of the major threats the scientific community will be facing in the coming months and years.

Support good microbiology practice at the laboratory level, educate all the stakeholders wherever they are, these are 2 principles that we apply in all the fields where bioMérieux is present: the veterinary world, the food safety world, the environmental monitoring world and last but not least the human world: from Farm to Folks.

ONE WORLD, ONE HEALTH, without any boundaries between the different worlds where bacteria are present has always been the vision of the Mérieux family and is now more than ever a topic of interest.

Continuously adapting to the numerous prerequisites for the management of critical infections, bioMérieux portfolio includes a complete range of solutions, from manual to automated methods. They are used around the world to help provide both rapid and accurate results.

In this issue, we let 4 users of our microbial identification and susceptibility testing solutions give their testimonials with one objective: share experience on the organization of microbiology laboratories.

A warm thank you to Dr. med. vet. Ivonne STAMM (Vet. Med. Labor GmbH, Germany), Dr Jean Louis MOYEN (LDAR24, France), Mrs. Marisa BARREAL LOPEZ (LIGAL, Spain) and Dr. Tommaso FURLANELLO (Italy) for their sustained contribution and support to this newsletter.

As you read these pages, think of what you would like to see developed in future issues and send your suggestions along to us. Your continuous feedback will further improve and enrich this bioVeterinary newsletter.



→ Mrs Dr. med.vet. Ivonne STAMM

Specialist in Microbiology

→ Head of Microbiology Department

→ Company: Vet Med Labor GmbH, Division of IDEXX Laboratories

→ Country: Germany

Interview

BIOVETERINARY DIAGNOSTICS:

Would you please tell our readers about you and your Laboratory?

- Our laboratory is part of the IDEXX lab group with over 60 labs worldwide and with 5,800 employees
- Huge lab based in the middle of Europe (Germany), offering services for veterinary diagnostics on an international basis (covering Europe)
- All diagnostic disciplines are covered, e.g., hematology, histology-pathology, microbiology, immunology, serology, etc.
- Microbiology activity: advanced technologies are applied (e.g., AST based on MIC determination with the VITEK®2 system, identification with MALDI-TOF-MS), combined with experienced and highly qualified staff trained very well in the field of clinical veterinary microbiology
- Samples are derived from European veterinarians / vet clinics treating all species of animals (mainly companion animals, exotic animals, zoo animals, farm animals, etc.)

BIOVETERINARY DIAGNOSTICS:

Regarding your specialized activity in the companion animal field, what is your perception of antibiotic resistance issue in Europe?

- There are differences in awareness of antibiotic resistance across Europe, especially with multi-resistant bacteria
- There is still a pretty good situation in most of Scandinavia, becoming more problematic towards the south of Europe
- Awareness for methicillin resistance in *staphylococci* (e.g., MRSA, MRSP) increased over the years and is now well recognized by veterinarians, also due to its frequent press announcements
- Antibiotic resistance in gram negative organisms is on the rise (e.g. ESBL producing *enterobacteriaceae*),

VITEK®2 AST



and even first cases of carbapenemase producers in *enterobacteriaceae* have been observed, even in our diagnostic material

- Referral clinics seem to be at greater risk to acquire multiresistant organisms, the reasons for this still being largely unknown
- Hygiene control measures become more and more important when dealing with antibiotic resistance
- Antibiotic resistance is now a major threat to public and animal health

BIOVETERINARY DIAGNOSTICS:

Concerning antibiotic resistance, what are the stakes for you as an international veterinary diagnostics laboratory service?

- Different expectations from clients from different countries
- Different drugs approved for treatment for veterinary use in different countries
- Different national governmental restrictions for the use of antibiotics (e.g. in Scandinavia, in France, etc.)
- Different surveillance systems for antibiotic resistance in the European countries (e.g. Sweden: MRSA has to be notified to the authorities)

BIOVETERINARY DIAGNOSTICS:

As a long time user of the VITEK®2 AST cards solution, can you share with us why this is the right solution for your daily routine?

- It provides kinetic measurements, fast turnaround time, and economic utilization of instrument capacity
- It is a reliable technology, fully automated process for labs with higher throughput, easy to use
- Based on MIC (Minimum Inhibitory Concentration) determination
- Scientific database for determination of resistance phenotypes helps to avoid treatment failures
- Only small volumes of biohazard waste to be disposed of
- The user can apply standards of their own choice for evaluation of the measurements (e.g. CLSI® versus EUCAST or others)
- Good scientific and technical support

BIOVETERINARY DIAGNOSTICS:

What principle argument would you put forward for recommending the use of MIC values for antibiotic stewardship?

- Unless we take significant actions to improve efforts to prevent infections and also change how we prescribe and use antibiotics, the world is headed for a post-antibiotic era, in which common infections which have been treatable for decades can once again kill. This needs to be a global effort. Key tools to tackle antibiotic resistance are basic systems to track and monitor the problem of antibiotic resistance, infection control, and vaccination to reduce the need for antibiotics. The use of MIC values will be helpful in antibiotic stewardship. There is much that needs still to be learned about drug levels and treatment efficacies for the many different animal species in comparison to humans, which at the moment hampers the use of MIC values in this field.



→ M. Jean-Louis MOYEN

Director

→ Company: LDAR24

→ Country: France

Interview

BIOVETERINARY DIAGNOSTICS:

Would you please tell our readers about you and your Laboratory?

■ I am a veterinary surgeon and after having worked in large animal practice, I now work in a public veterinary laboratory since 2000. The analysis and research departmental laboratory is a regional public laboratory. It is involved in water and environmental analyses, food hygiene and industry as well as animal health. As a result we receive various sample types and detect a large number of different pathogens.

Research collaborations are established with public organisations (reference laboratories, universities and veterinary schools) and the industry sector in France and abroad.

BIOVETERINARY DIAGNOSTICS:

How did you historically perform microbial identification testing?

■ We worked in a conventional manner principally employing biochemical identification tests (media or API® system) to specific environmental or chromogenic media. Currently, Molecular Biology is also employed for some specific pathogens

BIOVETERINARY DIAGNOSTICS:

What made you consider mass spectrometry?

■ We wanted to accelerate and improve our diagnosis capacity. The unit cost of mass spectrometry analysis and the technician time savings are also important elements. Mass spectrometry provides a comprehensive response to the different microbiology departments within the laboratory. The connection to the laboratory data management software ensures a good traceability.



VITEK® MS

BIOVETERINARY DIAGNOSTICS:

Why did you choose bioMérieux?

■ We had already long term relations with bioMérieux and had complete trust in its ability to meet our needs. The collaboration that was set up to address our specific needs in veterinary microbiology including the identification of Mycobacteria finished by convincing us.

BIOVETERINARY DIAGNOSTICS:

How was the integration of VITEK® MS Plus?

■ The implementation of on-site training of nominated individuals from each department enabled our staff to get up to speed rapidly. All of the technicians involved in microbiology in different departments quickly acquired basic skills on the sample preparation and use of Myla (IVD) software to integrate the MALDI-TOF in all of the identifications. Furthermore, a smaller group was trained on the RUO (Saramis®) database which is an open source database that enables research or testing of veterinary germs of interest that are currently not present in the closed source IVD database.

The RUO database is only used on rare occasions and requires a few additional steps, and hence only a select few technicians were trained. One person is involved with the Spectra management who works with the bioMérieux R&D department. Regular contact with "la Balme" R&D site in France allows for a very good follow up.

BIOVETERINARY DIAGNOSTICS:

Today can you point out the benefits in using VITEK® MS in routine for your microbial identification?

■ Customers are very satisfied with the significant time saving in reporting of results for certain germs. An important decrease in the time spent by the staff on identification and at a reasonable cost are significant factors for the laboratory.

MALDI-TOF also enables additional identifications compared to biochemical test methods.



03 | API®



→ Dr. med. vet. Tommaso FURLANELLO

Scientific Director

→ Company: Veterinary Laboratory San Marco, Padua

→ Country: Italy

Interview



BIOVETERINARY DIAGNOSTICS:

Would you please tell our readers about you and your Laboratory?

■ The San Marco Laboratory is the largest commercial laboratory located in Italy. It offers diagnostic services to veterinary practitioners, Universities and Biological companies. The Laboratory operates alongside a well-known referral clinic located in the same building. The Laboratory is operated by board certificated veterinary specialist, biologists and other specialists. Its newer section is dedicated to mass spectrometry, HPLC and related techniques.

BIOVETERINARY DIAGNOSTICS:

What are the main bacterial pathologies that you encounter?

■ The main bacterial pathologies we commonly face in animal samples that we examine are due to the presence of *Escherichia coli*, *Pseudomonas* spp and *Staph.* spp

BIOVETERINARY DIAGNOSTICS:

How many samples do you process per week and how do you manage them?

■ Currently we process 70-80 samples/week. The samples are received in transport buffer and we

begin by looking for aerobic microorganisms on blood agar plates before the use of differential and selective media for bacteria and yeast.

We also receive samples in transport media with a view to then searching for aerobic and anaerobic microorganisms on blood agar plates before again the use of differential and selective media for bacteria and yeast. Anaerobic plates are then incubated under an appropriate CO₂ concentration. We analyze the urine samples we receive using Dip-slide culture or chromogenic media. After the first common step on agar media plates, we identify the microorganism using miniAPI® and then perform susceptibility tests using the Kirby Bauer method.

Today the problem encountered with veterinary samples (companion animals – dogs and cats) is that the antibiotics used in clinical practice are different from those used in human medicine. We need a tailored list of antibiotics, that should consider efficacy, feasibility, route of administration, costs and even legal issues. The choice of antibiotics for every test is a relevant task for the scientific committee of the Laboratory and is subject to constant updates, according to culture results, scientific information and experience collected in clinical practice.

BIOVETERINARY DIAGNOSTICS:

Why API® is the right solution for your laboratory?

■ We think API is the right solution for our laboratory at this moment considering the number of samples we process daily. For the future we would like bioMérieux to launch new antibiograms customized for small animals

BIOVETERINARY DIAGNOSTICS:

If you want to communicate to our readers 3 Key advantages of API, what would they be?

- 1. Sustainable cost of reagents
- 2. Ease-of-use
- 3. Good Performance



→ Mrs Marisa BARREAL LOPEZ

Technical Director

→ Company: LIGAL

→ Country: Spain

Interview

BIOVETERINARY DIAGNOSTICS:

Would you please tell our readers about you and your Laboratory?

■ The LIGAL is the Galician Inter-professional Milk Analysis Laboratory in which are represented the Galician primary milk producers as well as the dairy industries. Both of them have an equal power of decision in the laboratory's present and future running.

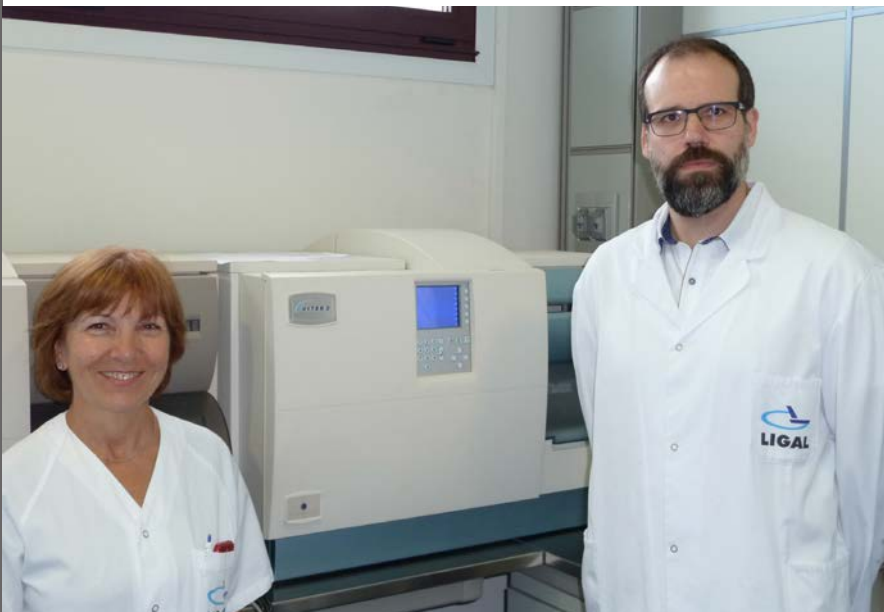
We solve the customer doubts and reply to their suggestions.

One of the pillars to achieve this goal is the accreditation of the testing procedure, which involves a thorough quality control, ensuring traceability and transparency of the processes employed.

BIOVETERINARY DIAGNOSTICS:

Can you share with us why you have recently chosen the VITEK® MS plus for your daily routine identification?

■ There were three main reasons involved in the taking of the decision. On the one hand the analytical cost is significantly lower and this is an incentive to our customers, on the other hand the speed in obtaining results, and thirdly the reduction of waste generated and the consequent improvement of the environmental impact of processes implemented in the laboratory.



BIOVETERINARY DIAGNOSTICS:

As a long time user of VITEK® 2, can you share with us your experience of using the VITEK® AST card solution for mastitis issues?

■ The design of the VITEK antibiotic susceptibility card in terms of active ingredients used, together with the interpretation of susceptibility by the expert system based on the identification of the organism, provides optimal results for treatment in cases of mastitis. The VITEK® 2 provides information on the most appropriate antibiotic for each case considering the sensitivity of the bacterial strain causing the infection.

Galicia (NUT2 region within Spain) produces 40% of the Spanish milk volume and represents 55% of dairy farms. Taking into account the milk volume production, this area occupies the 10th position within the EU. My function in LIGAL is Technical Director.

BIOVETERINARY DIAGNOSTICS:

Regarding your specialized laboratory activity in the dairy field, can you give us the key commitments you have to your customers?

■ The key commitments to our customers are the accuracy of the analytical results, their independence and impartiality, as well as complete customer satisfaction.

BIOVETERINARY DIAGNOSTICS:

What principle argument would you put forward for recommending the use of MIC values for antibiotic stewardship?

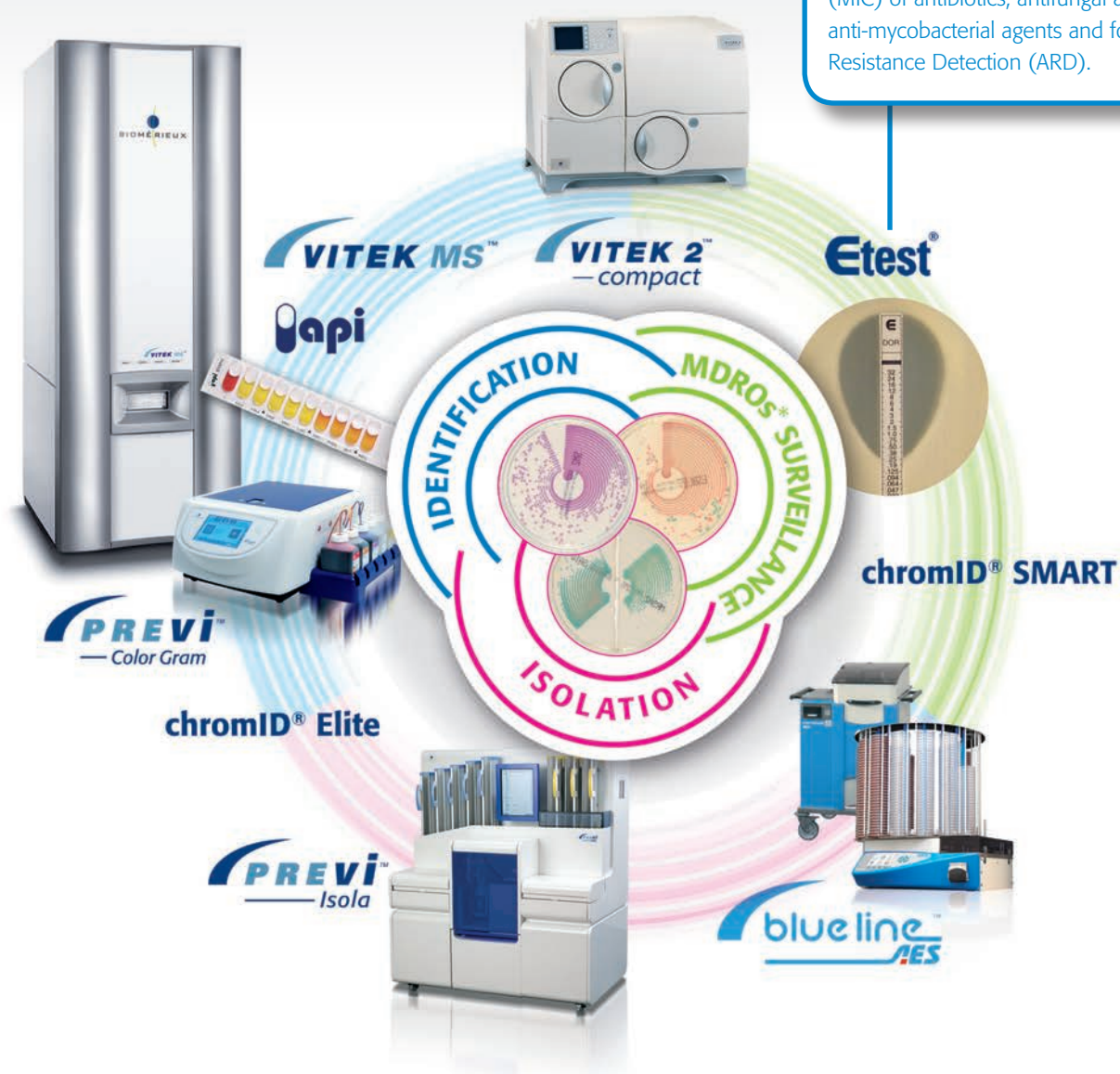
■ Knowing the numerical values of the MIC for each antibiotic allows you to choose the antibiotic with the MIC located in the Sensitive category and as far away as possible from the break point for the next category. This therapeutic option minimizes the possibility that the bacterial strain presents acquired resistance to this antibiotic.

FROM MICROBIOLOGISTS FOR MICROBIOLOGISTS

A global offer for a challenging issue
“One world, One health”

Etest® strips

The original gradient MIC strips are considered as a gold standard by many. Etest® lives up to its reputation for reliably determining the on-scale Minimum Inhibitory Concentration (MIC) of antibiotics, antifungal agents and anti-mycobacterial agents and for Antimicrobial Resistance Detection (ARD).



ANTIBIOTIC AWARENESS WEEK

November 17-23, 2014

Antibiotic Awareness Week is a great opportunity to raise awareness of antimicrobial resistance and promote the responsible use of antibiotics in both people and animals.

This annual event is a global initiative involving many countries and continents, such as Europe, the United States, Canada and Australia.

To effectively combat antimicrobial resistance, coordinated action in human and veterinary medicine is essential at a worldwide level. The Mérieux family has always been committed to a "Medicine without Borders" approach. Today, bioMérieux provides both clinical and veterinary diagnostic solutions to fight antibiotic resistance on all fronts.

bioMérieux fully supports Antibiotic Awareness Week through educational actions, including a World HAI/Resistance Forum, a practical guide on Antimicrobial Stewardship, peer-to-peer newsletters, videos...

Find out more at: www.biomerieux.com/besmart

Or watch our videos: www.youtube.com/user/bioMerieuxTV

BREAKING NEWS

ATCC and bioMérieux Collaborate to Deliver Accurate Identification of Industrial Microorganisms.

Combined capabilities will enhance the accuracy and range of microbial identification for pharmaceutical, food, veterinary labs.

ATCC, the premier global biological materials resource and standards organization, and bioMérieux, announced their collaboration to expand and reinforce the bioMérieux VITEK® MS microbial identification database for the industrial market. Recently, ATCC acquired the bioMérieux VITEK® MS system to make this innovative MALDI-TOF technology a fundamental component of their authentication and quality control processes.



bioMérieux S.A.
69280 Marcy l'Etoile
France

Tel. : 33 (0)4 78 87 20 00
Fax : 33 (0)4 78 87 20 90

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- Publishing director: Nicolas CARTIER
- Editors: Elisabeth MUZIN / Philippe MONTAGNE
- Contributors:
David SMART / Luis BURGOS
Luis TORRES / Muhammed YILMAZ
Stefano TABANELLI / Christine MICOLAUD
Stéphane DUBREUX

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veterinary@biomerieux.com

