



**Community Reference Laboratory,
Antibiotic Resistance**
The tasks of the CRL-AR



May. 3-4, 2007
National Food Institute,
Copenhagen, Denmark



Why a CRL-AR?

- The main purpose of the Community Reference Laboratory on Antimicrobial Resistance (CRL-AR) is to ensure the quality of antimicrobial susceptibility testing in the Member States and to harmonise the procedures and methodologies used.
- Thus, the activities aim at implementing, from an analytical point of view, the provisions of monitoring of antimicrobial resistance set down in Directive 2003/99/EC of the European Parliament and of the Council of 17 November 2003 on the monitoring of zoonoses and zoonotic agents.



The tasks of the CRL-AR

(The Tasks)

- Scientific advice and support to the Commission
- Co-ordination of National Reference Laboratories and provision of technical support
 - Creation of the network of NRL's
 - Workshops
 - Dissemination of knowledge and information
 - Collection of information on activities at the NRL's
- Ring trails, comparative testing and quality assurance
- Confirmatory testing
- Evaluation and development of analytic methods





The tasks of the CRL-AR (The Tasks)

Scientific advice and support to the Commission

- Participation in all relevant working groups related to the subject antimicrobial resistance e.g. EFSA, EMEA...
- Ad hoc advice in reports etc.





The tasks of the CRL-AR

(The Tasks)

Co-ordination of National Reference Laboratories and provision of technical support

- Creation of the network of NRL's
 - The address list
- Workshops
 - One annual workshop May 3-4
 - WHO Workshop “CIA – Critical important antibiotics” April 2007
 - Conference 2008 “Antimicrobial resistance in zoonotic Bacteria”
- Dissemination of knowledge and information
 - Home page: WWW.CRL-AR.EU
 - Newsletters
- Collection of information on activities at the NRL's
 - Questionnaires





The tasks of the CRL-AR (The Tasks)

Newsletter - Community Reference Laboratory for Antimicrobial Resistance

No. 1, February 2007

National Food Institute
Technical University of Denmark
NEWSLETTER
to the
**National Reference Laboratories
for Antimicrobial Resistance**

No. 1, February 2007

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Looking forward to working with you!

With much anticipation we – the Community Reference Laboratory for Antimicrobial Resistance – have commenced coordinating this network of sharing experience and knowledge about activities concerning antimicrobial resistance. With this newsletter we will draw your attention to recent developments concerning three very relevant subjects: MRSA, quinolone resistance and breakpoints.

Methicillin-resistant *Staphylococcus aureus* in animals

By Frank M. Aarestrup

From being almost exclusively a nosocomial pathogen Methicillin-resistant *Staphylococcus aureus* (MRSA) have during the last two decades emerged into the community and have recently also caused infections in and colonized pets and production animals. MRSA have been detected in cattle, chickens, horses, pigs, dogs, rabbits, seals, birds and cats. The colonization in animals has in several cases been implicated in infections in humans and MRSA should today be considered a zoonosis. It is however, important to distinguish between the epidemiology of MRSA in relation to production animals, where a new clone seemingly is emerging, and pet animals, that are infected with classical human variants of MRSA.

Production animals

In relation to colonisation in pigs, MRSA were in October 2004 isolated from a young mother with mastitis in the Netherlands. The father and daughter were also found to carry MRSA. Six months later the daughter was admitted to a hospital for surgery and the entire family was again found positive for MRSA. Normally, the Dutch population have a <1% MRSA incidence, commonly associated with treatment in foreign hospitals. As the father was a pig farmer the

finding initiated a number of studies. In a small survey of pig farmers, MRSA was found in 23% (6/26 farmers) and in another survey of veterinarians and veterinary students in the Netherlands that found an average of 4.6% were carriers of MRSA. A study in the pig population has revealed a colonisation rate of 40% of all slaughter pigs and 80% of pig slaughter batches (out of a total of 54 batches and a total of 540 animals examined) in the Netherlands. All isolates belong to a specific clone ST398, which seems to have established itself in the pig population in the Netherlands from where it transfers to humans. This clone was recently isolated from skin infection in a pig and also from a dairy cattle farm in the Netherlands from cows suffering from mastitis caused by this strain.

The same clone (ST398) of MRSA was in the fall 2006 detected in patients in Denmark, most of which have had close contacts to production animals, mainly swine. In addition, a single MRSA isolate has also been found in a swine farm in Denmark. Studies are currently being conducted into the occurrence of MRSA among production animals in Denmark. Information from other countries has at this time not





The tasks of the CRL-AR (The Tasks)

Ring trails, comparative testing and quality assurance

- Ring trails, comparative testing and quality assurance
 - Proficiency tests (THE MAIN TASK)
- Confirmatory testing
 - Reference testing
- Evaluation and development of analytic methods
 - Establishing reference strain collections for relevant research and requests
 - Methods for detection of cephalosporin- and quinolone resistance and MRSA





The tasks of the CRL-AR (The ring trial system - EQAS)

- AST of eight *Salmonella*, *Campylobacter*, *E.coli*, *Staphylococcus* and *Enterococcus* strains
- Supply labs with original ref. strain ATCC 25922, ATCC ATCC 25923, ATCC 29213 and ATCC 29212
- Results and comments submitted through a web-based data entry program, using individual passwords
- Instant individual evaluation reports with suggestions for corrective actions
- Yearly over-all evaluation reports on the web





Thank you!

National Food Institute

Technical University of Denmark

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Please note!

*The Danish Institute for Food and Veterinary Research, DFVF
has merged with five other institutes why Rene, Danilo, Michael,
Susanne and I now works in the **National Food Institute, FOOD-DTU.**
Our e-mail addresses have changed.*

