## Activities in 2009

### Paratuberculosis

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### Summary of general activities related to the disease

1. **Test(s) in use/or available for the specified disease at your laboratory**

<table>
<thead>
<tr>
<th>Test (Total)</th>
<th>For</th>
<th>Specificity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immune Diffusion Test (153)</td>
<td>Antibodies</td>
<td>Paratuberculosis</td>
<td>150 samples from wild ruminants 3 samples from cattle</td>
</tr>
<tr>
<td>ELISA (198)</td>
<td>Antibodies</td>
<td>Paratuberculosis</td>
<td>198 samples from cattle</td>
</tr>
<tr>
<td>Culture HPC-sedimentation (4283)</td>
<td><em>M. avium</em> subsp. <em>paratuberculosis</em></td>
<td>Paratuberculosis</td>
<td>3 250 cattle faeces 344 cattle tissues 25 cow’s milk samples 298 wild ruminant faeces 7 wild ruminant tissues 5 horse faeces 3 dog faeces 2 dog tissues 1 goat faeces 348 environmental samples</td>
</tr>
<tr>
<td>Quantitative Real Time PCR (2663)</td>
<td><em>M. avium</em> subsp. <em>paratuberculosis</em></td>
<td><em>F57</em> and <em>IS900</em></td>
<td>213 tissue 1992 faeces 92 milk 28 milk filters 46 blood 292 environment</td>
</tr>
<tr>
<td>PCR Quadruplex (148)</td>
<td>Isolates</td>
<td>Quadruplex system for <em>M. avium</em> species differentiation</td>
<td>53 <em>M. a. paratuberculosis</em>: 23 in cattle 2 in deer 28 laboratory isolates</td>
</tr>
<tr>
<td>16S rRNA PCR (230)</td>
<td>Isolates</td>
<td>16S rRNA PCR system for <em>Mycobacterium</em> sp. and <em>M. avium</em> complex members identification</td>
<td>112 <em>M. avium</em> sp. 1 <em>M. intracellulare</em> 107 other atypical mycobacteria</td>
</tr>
<tr>
<td>IS900 RFLP (20)</td>
<td>Isolates</td>
<td>Standardized method</td>
<td>20 cattle isolates</td>
</tr>
</tbody>
</table>

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1 Specific fragments for *M. avium* subsp. *paratuberculosis*; home made technique: Slana, I., Kralik, P., Kralova, A., Pavlik, I.: On-farm spread of *Mycobacterium avium* subsp. *paratuberculosis* in raw milk studied by IS900 and
2. Production and distribution of diagnostic reagents

None

Activities specifically related to the mandate of OIE Reference Laboratories

3. International harmonisation and standardisation of methods for diagnostic testing or the production and testing of vaccines

None

4. Preparation and supply of international reference standards for diagnostic tests or vaccines

None

5. Research and development of new procedures for diagnosis and control

None

6. Collection, analysis and dissemination of epizootiological data relevant to international disease control


7. Provision of consultant expertise to OIE or to OIE Members

None

8. Provision of scientific and technical training to personnel from other OIE Members

Under the terms of OIE Reference laboratory three laboratory trainings are provided:

**Cultivation, microscopy and identification methods for the detection of mycobacteria (5 days training)**

**The quantification of Mycobacterium avium subsp. paratuberculosis in milk using real-time qPCR (5 days)**

**The differentiation of Mycobacterium avium subsp. paratuberculosis using RFLP analysis (7 days)**


9. **Provision of diagnostic testing facilities to other OIE Members**

None

10. **Organisation of international scientific meetings on behalf of OIE or other international bodies**

Moderated round table discussion “**Bacterial triggers in the etiology of Crohn’s disease and other autoimmune and autoinflammatory diseases**” was organised by Karel Hruska and Ivo Pavlik and was held by the PathogenCombat integrated research project of the European Union (6th Frame Programme) and OIE Reference Laboratory for Paratuberculosis in Veterinary Research Institute (Brno - Tisnov, Czech Republic) between 14th and 15th May, 2009 (invited participants: Douwe Bakker, The Netherlands, Michael T. Collins, Joe O. Falkinham III and Jiri Mastecky, USA, John Hermon-Taylor, U.K., Ramon Juste, Spain, Jindrich Kazda, Germany and Helena Tlaskalova-Hogenova, Czech Republic).

11. **Participation in international scientific collaborative studies**

• **National grants**


• **European Union Grants:**

  http://www.ucm.es/info/venom/

  http://www.pathogencombat.com


12. **Publication and dissemination of information relevant to the work of OIE (including list of scientific publications, internet publishing activities, presentations at international conferences)**
Presentations at international conferences and meetings


Kralik, P., Pavlik, I.: Culture independent determination Mycobacterium avium subsp. paratuberculosis viability by propidium monoazide F57 real time qPCR. In: Proceedings of the 10th International Colloquium on Paratuberculosis, August 2009 Minnesota, USA, 45.

Slana, I., Kaevska, M., Kralik, P., Kralova, A., Pavlik, I.: Mycobacterium avium subsp. paratuberculosis detection in faeces and tissue samples by quantitative real time PCR and by cultivation. In: Proceedings of the 10th International Colloquium on Paratuberculosis, August 2009 Minnesota, USA, 46.


Scientific publications in peer-reviewed journals

Slana, I., Liapi, M., Moravkova, M., Kralova, A., Pavlik, I.: Mycobacterium avium subsp. paratuberculosis in cow bulk tank milk in Cyprus detected by culture and quantitative IS900 and F57 real-time PCR. Preventive Veterinary Medicine, 2009, 89, 223-226.


Other communications

Knowledge dissemination is the integral part of activity of OIE Reference Laboratories for Paratuberculosis and Avian Tuberculosis. The databases have been updated weekly using the records, indexed by the Web of Science database (Thomson Reuters®). More than 2000 subscribers for (08) Mycobacterial diseases and (27) Scientific information (Veterinary Biotechnology, Epidemiology and Food Safety Network http://centaur.vri.cz) received by e-mail the annotations of recently published papers. In 2009, the database “Publications on Paratuberculosis” (http://www.vri.cz/en/ptb) has been updated by 233 papers published in 118 scientific journals. The database “Crohn’s Disease and Paratuberculosis Digest” (http://www.vri.cz/en/cd-ptb-digest) has been updated by 129 records of articles, published in 93 journals. During the year 2009 a total 746 full papers (3-fold increase of interest in comparison with 2008) have been dispatched to applicants from 17 countries (Australia, Bulgaria, China, Czech Republic, Egypt, France, Italy, Ireland, India, Saudi Arabia, Slovakia, Slovenia Spain, Switzerland, The Netherlands, United Kingdom and USA). In addition to 32 e-mails with information on databases updates, 50 other information on EU documents, international meetings, interesting case reports, new books, distance learning course etc. have been distributed among people, interested in mycobacteria research and control.
13. Inscription of diagnostic kits on the OIE Register

i) Did you participate in expert panels for the validation of candidate kits for inscription on the OIE Register? If yes, for which kits?

None

ii) Did you submit to the OIE candidate kits for inscription on the OIE Register? If yes, for which kits?

None