New and emerging technologies: improved laboratory and on-site detection of OIE list A viruses in animals and animal products

The ultimate aim of the LAB-ON-SITE project was to improve the diagnosis of 10 highly infectious and devastating transboundary animal diseases (TADs) notifiable to the World Organisation for Animal Health (OIE): foot-and-mouth disease (FMD), swine vesicular disease (SVD), vesicular stomatitis (VS), classical swine fever (CSF), African swine fever (ASF), bluetongue (BT), African horse sickness (AHS), Newcastle disease (ND) and highly pathogenic avian influenza (HPAI). Considering the increasing epizootiological and epidemiological importance of swine influenza (SI), this disease is also included in the list.

The work programme focused on new and emerging technologies specifically for the development, validation and dissemination of robust, specific and sensitive diagnostic tests. It combined the development of improved ‘first line’ diagnostics that can be used by veterinarians in the field with development of robust and simple nucleic acid detection methodologies that can be used in local laboratories. In addition, the work programme developed and evaluated diagnostic tests for TADs based on the most recent advances in real-time polymerase chain reaction (PCR) technology, methods of detecting nucleic acid without thermocycling, as well as microarray and rapid readout formats.

In addition, the project brought together an EU-based multidisciplinary, strong scientific team which developed a wide range of novel diagnostic assays, such as new PCR-based and isothermal amplification methods, novel multiplex diagnostic assays, ‘simple on-site’ diagnostic methods and new serological assays. A wide set of novel diagnostic methods was developed for the improved diagnosis of all the 10 targeted TADs. The methods were introduced in diagnostic laboratories an internationally harmonised, following OIE regulations.
By providing novel, highly sensitive, specific, high-throughput and robust methods for central institutes, for simply equipped field laboratories and for the on-site diagnosis in the field, the project had a strong contribution to the improved diagnosis and control of the devastating TADs worldwide.