MMSL
Military Medical
Science Letters
Since 1925

Mil. Med. Sci. Lett. (Voj. Zdrav. Listy) 2019, 88(1), 33-36
ISSN 0372-7025 (Print)
ISSN 2571-113X (Online)

LETTER TO THE EDITOR

GLANCE BACK AND LOOK AHEAD: 9th INTERNATIONAL CONFERENCE ON TULAREMIA

The interest and the increasing need for communication, exchange of experience and materials, training in diagnostics and research methods has led to the idea of creating an international scientific society focusing on tularemia. Tularemia meetings focus on fundamental, clinical, and applied research regarding any aspect of *Francisella tularensis*. Research uncovers not only the biology of this fascinating bacterium, but also provides the basis for future development of treatments, preventive interventions, and disease diagnosis. Under the umbrella and with active participation of WHO, a group of scientists has met to develop this idea. Finally, the non-profit organization Tularemia International Society (TULISOC) has been established to facilitate and encourage the assembly, acquaintance and association of scientists from all geographical regions engaged in tularemia research, foster and encourage discussion and dissemination of the results of research and related matters of interest in this field and promote awareness of the field and of the implications of the research findings. It is the honor for the Faculty of Military Health Sciences that one of the scientists working at the Department of Molecular Pathology and Biology (Dept. Mol. Pathol. Biol.) was a member of Organizing committee for all conferences of this series since the First International Conference on Tularemia held in Umea, Sweden. Prof. Jiri Stulik has been selected for the 9th conference held in Montreal, 16-19 October, 2018.

Tularemia is an epizootic infection caused by *Francisella tularensis* (*F. tularensis*). It is primarily that tularemia is a disease of wild animals and is transmitted to humans by a contaminated environment or ectoparasites. Any age, sex, or race is universally susceptible to infection. *F. tularensis* is a small, Gram-negative, pleomorphic, nonmotile, nonspore-forming coccobacillus. It is a strict aerobe that infects the host as a facultative, intracellular bacterium. The two main biovars, *F. tularensis* subsp. *tularensis* (Type A) and F. *tularensis* subsp. *holarctica* (Type B) are the dominant source of infection in humans. . Type A produces the more serious disease in humans with an untreated fatality rate of approximately 5 % and is found exclusively in the North America. Type B produces a milder, often subclinical disease, and is associated with water or aquatic mammals. This subspecies is endemic through whole north hemisphere. Recent evidence of an increased incidence has been found in Scandinavian countries, eastern Europe, and Siberia.

The 9th International Conference on Tularemia was held in the Mont Royal Centre, a conference and special events centre offering excellence, versatility, and stellar service, which is located in the heart of Montreal, the largest city in eastern Canada and, after Paris, the second largest French-speaking city. The city Montreal remains an important cultural center and a destination for North American and European tourists enticed by its restaurants, entertainment,

neighborhoods, and the character of its older city. The conference was held from October 16 to October 19, 2018 and has kept with past traditions by maintaining an interdisciplinary program, that highlighted research efforts on the:

- Host Response and Immunity
- Vaccines and Therapeutics
- Pathogenesis and Cell Biology
- Bacteriology and Gene Regulation
- Human Infection and Treatment
- Epidemiology and Ecology of Tularemia

During the International Conference, 40 lectures were presented in one lecture hall. Additionally, the participants could visit 82 posters exhibited. The topics of poster presentation were focused on questions of highlighted research on tularemia. Among the chairs of all interdisciplinary sessions, Dr. Karen L. Elkins, Ph.D., from Food and Drug Administration, USA has opened the conference during Welcome reception with Keynote Address from Dr. Wayne Conlan, National Research Council, Ottawa, Canada.

The group of researchers from the Dept. Mol. Pathol. Biol., Faculty of Military Health Sciences, University of Defence presented the following interdisciplinary studies:

Oral presentations:

- Kubelkova K., Benuchova M., Plzakova L., Krocova Z., and Macela A.: *Francisella* inside the cell: implications for innate immune recognition of intracellular bacteria

- Stulik J., Balonova L., Link M., Dankova V. and Sesko V.: Inactivation of Francisella tularensis gene encoding putative flipase has a pleiotropic effect upon production of various glycoconjugates: evidence for PilA protein modification by O-antigen

Poster presentations:

- Bavlovic J., Klimentova J., and Stulik J.: Secretion of outer membrane vesicles in *F. tularensis* and a set of mutant strains with disrupted surface structures

- Klimentova J., Pavkova I., Plzakova L., Bavlovic J., Kubelkova K., and Stulik J.: Outer membrane vesicles and nanotubes in *Francisella tularensis* – proteomic characterization and role in host-pathogen interactions

- Kubelkova K., Spidlova P., Pavkova I., Stulik J, and Lenco J.: Bioorthogonal labeling of *F. tularensis* proteome during in vitro infection

- Kopeckova M., Pavkova I., Rehulkova H., and Rehulka P.: Insights into the moonlighting of *Francisella tularensis* glyceraldehyde-3-phosphate dehydrogenase

- Plzakova L., Krocova Z., Kubelkova K., and Macela A.: Early cellular responses of germ free and specific pathogen free mice to *Francisella tularensis* infection

- Proksova M., Rehulkova H., Rehulka P., Lays C., Stulik J., Henry T., and Lenco J.: Seeking host targets of Francisella pathogenicity island effectors

- Rehulka P., Fabrik I., Link M., Fabrikova, D. Plzakova L., Pavkova I., Vozandychova V., Krocova Z., Santic M., and Stulik J.: Signaling in dendritic cells during *Francisella tularensis* invasion analyzed by phosphoproteomic approach

- Sesko V., Golovliov I., and Stulik J.: Protein production in *Francisella tularensis* LVS under control of TetR inducible system

- Spidlova P., Stojkova P., Dankova V., Senitkova I., Santic M., Pinkas D., Philimonenko V., and Stulik J.: *Francisella tularensis* D-Ala D-Ala carboxypeptidase DacD is involved in intracellular replication and it is necessary for bacterial cell wall integrity

- Stojkova P., Spidlova P., Lenco J., Rehulkova H., Kratka L., Hercik K., and Stulik J.: HU protein is involved in intracellular growth and full virulence of *Francisella tularensis*

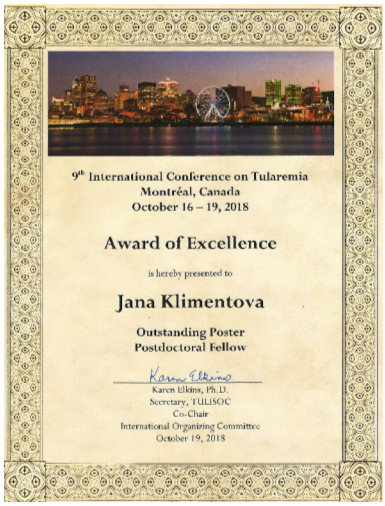
Within the great competition of 82 presented posters, three scientific participants from our faculty have shown the outstanding success during the poster presentation. Kopeckova M. and Stojkova P. have received the prize for the Best Poster Pitch Presentation in the Postgraduate student section and Dr. Klimentova J. has been awarded with the Best Poster Presentation in the Research and Postdoc section which implies an overal high level of scientific research results at the international level.

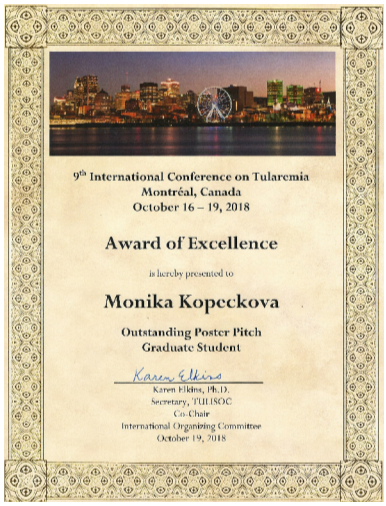
The number of meetings were taking place during the conference dealing with the ongoing and future scientific cooperations. The representatives of the Dept. Mol. Pathol. Biol. negotiated the next long-term cooperation with prof. Santic (University of Rijeka, Croatia), Dr. Elkins (Food and Drug Administration, USA), Dr. Roberto De Pascalis (Food and Drug Administration, USA), prof. Sjostedt (University of Umea, Sweden), Dr. Henry (Inserm and Lyon University, France), Dr. Klaus Heuner (Robert Koch Institute, Berlin), and prof. Maurin (University of Grenoble, France). Moreover, the possibilities of mobility activities of PhD. students and Postdocs supports were settled and organized within the multilateral networks.

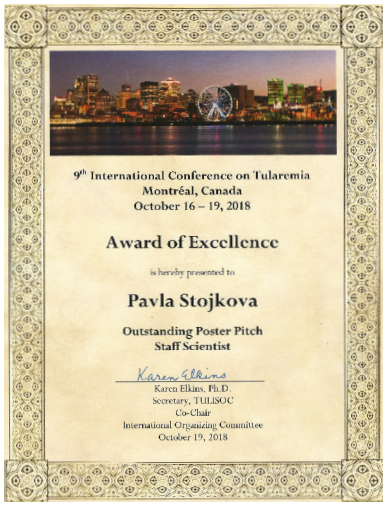
With insight into the past, the First International Conference on Tularemia was held in Umea, Sweden, in 1995. The second conference was organized by Purkyně Military Medical Academy in Hradec Kralove in 1997. The subsequent conferences have been organized every three years at venues located in Europe, or in the United States. The conference has a rich history of having hosted hundreds of attendees and presenters from academia and from the clinic and industry. This engagement provides an enviroment wherein this interdisciplinary group has integrated and established relationships within *Francisella* research.

To conclude, the 9th International Conference on Tularemia has featured new research directions and methods for drug and vaccine development. Moreover, an overreaching goal of the four-day program of the conference was to provide an enviroment that will serve to promote collaboration among scientists doing cutting edge research regarding tularemia.

On behalf of conference attendees, I would honorably like to thank the Local Organizing Committee, especially Dr. Karen L. Elkins, Ph.D. (CBER, FDA, USA), TULISOC, and Scientific Committee for this great meeting of interesting people from all of the world. Hopefully the next 10th International Conference on Tularemia, which will be held in France in 2021 will promise at least the same outstanding success.







Disclosure statement

The author proclaim no competing interests.

Acknowledgement

The participants from Faculty of Military Health Sciences, University of Defence were supported by Long-term Organization Development Plan 1011 from Ministry of Defence, Czech Republic, Grant No. 15-02584S from the Czech Science Foundation, grant A-1152-RT-GP from European Defence Agency, and Specific research projects No. SV/FVZ201707, SV/FVZ201801, and SV/FVZ201603 from the Ministry of Education, Youth and Sport of the Czech Republic.

✉
Klara Kubelkova
Department of Molecular Pathology and Biology
Faculty of Military Health Sciences
University of Defence
1575 Trebesska
500 01 Hradec Kralove
email: klara.kubelkova@unob.cz

Received 30th October 2018.
Accepted 1st November 2018.
Published 8th March 2019.