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ERA-NET PathoGenoMics Announces Winners of the Ph.D. Award for 2009

Göteborg, Sweden July 1, 2009 – ERA-NET PathoGenoMics, a project funded by the European Commission aimed at advancing transnational research in the field of pathogenomics, announced today the winners of the Ph.D. Award 2009 for the most outstanding Ph.D. theses in the field of genome research on human-pathogenic microorganisms (bacteria and fungi). The three winners, who were awarded 2000 € each, are Dr. Eric Alix from France, Dr. Matej Butala from Slovenia and Dr. Michal Feldman from Israel. The award ceremony took place at the 3rd FEMS Congress of European Microbiologists held in Göteborg, Sweden.

Dr. Marion Karrasch-Bott, Coordinator, ERA-NET PathoGenoMics said, "The Ph.D. Award emphasizes the importance of pathogenomics and contributes to integrate the PathoGenoMics scientific community. The proposals were evaluated by a board of high-level scientists according to scientific quality and impact on the field of pathogenomics. We wish to congratulate the winners and we hope that they will continue to produce high quality scientific contributions for aiding us in better understanding and treating diseases."

About Pathogenomics

Pathogen infections are among the leading causes for disease and mortality throughout the globe. As more pathogenic strains develop resistance to existing drugs, the race for finding novel anti-bacterial and anti-fungal drugs becomes ever more urgent. The field of pathogenomics utilizes data acquired by genomics and related methods in order to better characterize pathogenic bacteria and fungi, interactions between different strains, and interactions between the pathogen and the human host. Pathogenomics has already been invaluable in understanding pathogenic evolution and diversity, in characterizing novel virulence factors, and in paving the way towards designing new diagnostic tests and drugs that will help keep humankind abreast of ever-changing pathogens.

About the Chosen Ph.D. Theses

Eric Alix has received the award for identifying a novel post-translational mechanism that regulates MgtC, an important virulence factor shared by several intracellular pathogenic bacteria. Dr. Alix discovered a short transmembrane peptide, MgtR, which directly interacts with MgtC to induce its degradation by a specific protease. The novel peptide may serve as a potential diagnostic marker, as well as a new therapeutic approach

to attenuate virulence of pathogenic bacteria. In addition, this finding highlights the underestimated importance of genes encoding transmembrane peptides in bacteria, many of which have been found after computer analysis of the bacterial genome.

Matej Butala studied the generation of antibiotic resistance in *E. coli*, specifically to the popular antibiotic ciprofloxacin. Ciprofloxacin belongs to the SOS-inducing antibiotics, which induce the so called SOS response in bacteria, a response that may lead to induction of resistance to the drug. Dr. Butala's study demonstrated that when antibiotic concentrations fall below the effective, lethal dose, the bacteria respond by activating the SOS response in a specific manner. These results reinforce the need for great caution in the use of SOS-inducing antibiotics.

Michal Feldman studied *Legionella pneumophila*, the causative agent of Legionnaire's disease. Dr. Feldman found a novel gene family, named *fir* genes, which is important in enabling this pathogen to permeate its host cells, namely human macrophages and protozoa. This protein products of this gene family interact with another protein important for entrance of the bacteria into the cell, named IcmQ. By using bioinformatics and molecular biology tools, Dr. Feldman studied IcmQ and found specific functional domains within the protein, that both compromise the host's protective cellular membrane and activate a destructive response within the host cell.

About ERA-NET PathoGenoMics

ERA-NET PathoGenoMics, a project funded by the European Commission, has been set up to establish sustained co-operation between national funding bodies and to co-ordinate their genome-based research programs on human-pathogenic microorganisms. The participating ERA-NET PathoGenoMics partner countries and funding institutions include: Austria, Federal Ministry for Science and Research (BMWF) and The Austrian Science Fund (FWF); Finland, Academy of Finland (AKA); France, Institut Pasteur (IP), Ministère de l'Enseignement supérieur et de la Recherche (MESR) and The National Agency for Research (ANR); Germany, Federal Ministry of Education and Research (BMBF) and Project Management Juelich (PTJ); Hungary, Hungarian Academy of Science (HAS) and Hungarian Scientific Research Fund (OTKA); Israel, The Chief Scientist Office, Israeli Ministry of Health (CSO-MOH); Latvia, Latvian Council of Science (LCS); Portugal, The Science and Technology Foundation (FCT); Slovenia, Ministry of Higher Education, Science and Technology (MHEST); Spain, Ministry of Science and Innovation. For further information, please visit www.pathogenomics-era.net

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