Gloria Soberón-Chávez, J Bacteriol Parasitol 2014, 5:4
http://dx.doi.org/10.4172/2155-9597.S1.006

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Congress on
Bacteriology & Infectious Diseases
November 17-19, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA

Pseudomonas aeruginosa: A bacterial opportunist pathogen with an extremely well conserved genome that shows a variety of pathogenic interactions

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Pseudomoas aeruginosa is a γ-proteobacteria that can be isolated from different sources, both polluted and pristine, but is also an opportunistic pathogen that represents an important health hazard to immune-compromised individuals and to cystic fibrosis patients. We have shown that *P. aeruginosa* strains isolated from environments that are not close to humans, such as the ocean, and clinical isolates constitute a single population with a high degree of genome conservation. Genes encoding for virulence factors as well as the genes coding for proteins involved in the transcriptional regulation of these virulence associated traits, that are called the quorum-sensing response (QSR) are also conserved in the environmental strains. It is interesting though, that different isolates show a diverse phenotypic response to environmental stimuli, such as growth temperature, of the virulence factors regulated by the QSR. We have determined that the molecular mechanism involved in the QSR thermoregulation involves the participation of two RNA-thermometers, and that these regulatory elements are present in both clinical and environmental strains. Experimental evidence showing the involvement of other molecular elements in the modulation of the QSR, such as binding of regulatory proteins to specific DNA-sequences, will be presented.

Biography

Gloria Soberón-Chávez studied her Doctoral studies at the Universidad Nacional Autónoma de México (UNAM) in the field of bacterial molecular genetics. She is a 57 year old scientist that has published nearly 60 papers in reputed journals and has held leading positions in UNAM; she was Director of the Instituto de Investigaciones Biomédicas of this University from 2007-2011 and was head of UNAM Postgraduate Studies from 2011 to January 2014, from February of this year to date she is Directora General de Vinculación (Vice President of the Technology Transfer Office).

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