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# Occurrence and Distribution of Bacillus Species in Turkish Marine Environments

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# Scientific Tracks & Abstracts

## Day 2

*Microbial Interactions 2017*

# Sessions

Day 2 July 18, 2017

**Microbial Ecology | Environmental Microbiology | Microbial Diseases and Epidemiology |  
Microbial Biotechnology | Bioremediation | Plant-Microbe Interactions | Soil  
Microbiology | Probiotics-Prebiotics Research**

Session Chair

**Andreas Vilcinskas**

University of Giessen, Germany

## Session Introduction

**Title: Occurrence and distribution of Bacillus species in Turkish marine environments**

**Gulsen Altug**, Istanbul University, Turkey

**Title: Histopathological study for the effect of Intra -peritoneal (I.P) and subcutaneous (S.C) infection with different doses of Pasteurella multocida in Swiss mice**

**Waffa A Ahmed**, University of Baghdad, Iraq

**Title: An ecologist's perspective on sexually transmitted diseases (STDs): Host manipulation by STD agents as an explanation of silent infection modes and behavioral changes in HIV-infected MSM**

**Martin Heil**, CINVESTAV Irapuato, Mexico

## Video Presentations

### Session Introduction

**Title: Probiotics reduce DGAT1 and lipid profile that involved in chronic hepatitis C virus progression**

**Maii M Nabieh**, Tanta University, Egypt

**Title: Biotic and Abiotic Factors Influence formation and ontogenic dynamics of the lake sturgeon and channel catfish larval gut microbiome**

**Shairah Abdul Razak**, The National University of Malaysia, Malaysia

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**Occurrence and distribution of *Bacillus* species in Turkish marine environments**Gülşen Altug<sup>1</sup> and Samet Kalkan<sup>2</sup><sup>1</sup>Istanbul University, Turkey<sup>2</sup>Recep Tayyip Erdogan University, Turkey

Although *Bacillus* species are isolated in both terrestrial and marine environments, marine bacilli display more effective metabolically peculiarities depending on the specific environmental conditions of marine habitats. While *Bacillus* species play a significant role in biogeochemical recycling processes of metal salts, some of them described as potential biocontrol agents. In this study, occurrence and distribution of *Bacillus* species were investigated using culture-dependent and independent methods in the sea water samples taken from various marine areas of Turkey in different periods between 2000 and 2016. Variable environmental parameters; temperature, salinity, conductivity, pH and dissolved oxygen were recorded *in-situ*. The members of Bacillaceae were identified using both culture dependent methods; VITEK compact 30 micro identification system and molecular methods; bacterial DNA isolation, real time PCR (Q-PCR), PCR product purification, DNA sequence analysis and phylogenetic analysis. Micro-geographical distribution of *Bacillus* species and environmental variables were determined. The most common species were recorded to be *B. flexus*. Besides, *Bacillus cereus*, *B. thuringiensis*, *B. pumilus*, *B. firmus*, *B. mycoides*, *B. megaterium*, *B. oceanisedimini*, *Geobacillus stearothermophilus* showed high frequency of occurrence. The metabolic characteristics and color, spore-forming forms and resistivity frequencies against heavy metal salts of the strains have been shown that marine bacilli isolated from the marine areas have significant potential for possible biotechnological applications such as remediation of heavy metal polluted areas, can be used as a source of natural carotenoids and bio-drugs.

**Biography**

Gulsen Altug (Prof. Dr.) is a Professor and Marine Microbiologist in the Department of Marine Biology of the Fisheries Faculty at Istanbul University. Her research focuses on marine bacteriology, including bacterial diversity and micro-geographical variations, clinical, industrial and ecological uses of marine isolates, bacterial pollution, epibiotic bacterial communities and anti-bacterial characteristics, bacterial remediation (oil degrading capacity of marine isolates), and resistant bacterial isolates against heavy metals and antibiotics. She is also the Inventing Founder of the biotechnology start-up company named Biyotek15 R&D Training and Consulting Industry and Trade Ltd. Company in Entertech of Istanbul University Technocity.

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**Notes:**