ICMR International Travel Support for Non-ICMR Scientist

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- Name & Designation : Dr. K. Natrajaseenivasan, Professor.
- Address : Dept. of Microbiology, Bharathidasan University, Tiruchirappalli-620024.
- Name of the International Conference/ Seminar/Symposium/ Workshop : 54th Inter Science Conference on Antimicrobial agents and Chemotherapy-2014.
- Title of the abstract accepted : Impairement of Candida biofilm by actinomycetes and its therapeutic role in vulo-vaginal candidiasis.
- Date & Venue : 5-9th September 2014, Washington D.C., USA.
- Money sanctioned : Rs 1,00,000/-
- Money reimbursed : Rs 1,00,000/-

Participation Report

The "54th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC)" was an exclusive conference that addressed the developments, problems and thrust areas of research in a holistic manner. Diverse participants and Scientists from various countries were a unique feature of the conference. ASM has arranged for variety of sessions like poster walks, late breaker presentations, meet the experts, interactive symposia, slide sessions, ASM carrer connections career fair, ASM journals, ASM press book store, etc. The conference was scheduled in different topics to bring out all possible research areas and its findings. The oral and poster presentation were screened by expert committee and only selected papers were included in the sessions. From over 2,000 accepted abstracts, a total of 101 poster sessions, 29 slide sessions and five state-of the-art mini –lectures were presented during the different sessions were highly informative and innovative.

Academic Highlights of the Training/workshops including major recommendation and the following:

(i) New Development presented at the Training/Workshops:

To reduce the risk of *Candida* Spp. biofilm formation we have hypothesized from the present study that the quorum sensing signal homoserine lactone, which is a regulator of bacterial virulence, may inhibit hyphal development in *Candida*. This hypothesis may be a novel therapeutic strategy based on quorum sensing molecules. This is the first of this kind to establish an antifungal therapy in case of yeast biofilm. Other highlighted posters presentations which are new and informative in the conferences are antimicrobial pharmacokinectics, microbial pathogenesis and host response, new antimicrobial agents, laboratory diagnosis for neglected tropical diseases, modern drug discoveries and vaccine development process for dreadful diseases were presented.

(ii) New Development resulting from the Training/Workshops (200 words):

The "54th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC)" addressed the new drug discovery, new pathways, past lessons learned and remaining challenges for the research community. The research work presented by me was greatly appreciated by expert committee, scientist and research personalities from various countries. Each poster was highly informative and innovative. Various new development were highlighted in the conference, like recent emerging trend of human pathogen detection, antimicrobial susceptibility, identification of a new pathogen by high throughput sequencing methods, next generation sequencing, proteomics view at pathogenicity using 'omic methodologies, highly sensitive mass-spectrometry-based analyses that is ideal to identify the proteins but also to predict the structure-function relationships that are critical for virulence, Biofilm forming microbes, quorum sensing etc.

(iii) Name of the Publication in case your work is recommended for publications:

Shanmughapriya S, Sorna Kumari H, Lency A, Kavitha S, **Natarajaseenivasan K**. 2014. Synergistic effect of amphotericin B and tyrosol on the biofilm formed by *Candida krusei* and *Candida tropicalis* from intra uterine device users. ***Medical Mycology***, doi: 10.1093/mmy/myu046.

Participant's contribution to the Training/workshops (100 words):

The poster presentation was on the "Impairment of *Candida* Biofilm by Actinomycetes secreted factors and its therapeutic role in Vulo-Vaginal Candidiasis". The study evaluated the biofilm forming ability of the *Candida* Spp. isolates from vaginal swabs of candidiasis infected cases and the effect of compound produce by *Actinomycetes* on biofilm development. The purified antagonistic metabolites from *Streptomyces* strains showed a ~90% reduction in *Candida* biofilm ($P<0.001$) at a concentration as low as 1mg/L. The active metabolites homoserine lactones were identified by HPLC and LC-MS analysis. Thus homoserine lactones may be a better antibiotic for treating vulvovaginal candiasis. Research finding of this study make aware many of the researchers and scientist participated in the ASM conference.