

2<sup>nd</sup> International Conference and Exhibition on

# MARINE DRUGS AND NATURAL PRODUCTS

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## Shugeng Cao

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### Secondary metabolites as bio-controlling against plant pathogens

Rapid ohia death” caused by fungi *Ceratocystis fimbriata* and other *Ceratocystis* species is a new fungal disease that is currently attacking and killing ohia tree (*Metrosideros polymorpha*), the most abundant native tree in the state of Hawaii. The prevalence of “corn ear rots” (maize: *Zea mays* L.) caused by pathogenic fungi (e.g., *Fusarium graminearum*) in tropical and sub-tropical regions such as Hawaii is particularly troublesome because multiple yearly cropping cycles allow the pathogens to develop large populations, and additionally, these fungi create mycotoxins that are harmful to humans and livestock when consumed. Screening of our natural product library followed by assay-guided separation of two hit led to the discovery of a few polyketides from marine fungi FT361 and FM324, which showed potent inhibition against *Fusarium graminearum*. A microbial metabolite strongly inhibited both *Ceratocystis fimbriata* and *Fusarium graminearum*.

### Biography

Shugeng Cao has his expertise in biologically active natural products from different sources, initially from plants, then from fungi and bacteria, and lately more on marine organisms. Besides drug discovery from natural sources, he is also interested in studying natural products in the fields of ecology and agriculture. At the Cancer Center and Daniel K Inouye College of Pharmacy, University of Hawaii, his lab has collected about 300 bacterial and more than 2,000 Hawaiian fungal strains from soil, marine and endophytes.

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