Aquaculture; Potential source of marine bioactives

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Marine organisms are increasingly being investigated as sources of bioactive molecules with therapeutic applications as nutraceuticals and pharmaceuticals. Marine bioactives can be derived from a vast array of sources, including marine plants, microorganisms, and sponges, all of which contain their own unique set of biomolecules. These bioactive molecules can be applied in many fields such as the drug, cosmetic, and food industries. In particular, retrieval and characterisation of these bioactive molecules from marine processing waste contribute valuable information to the vast field of marine natural product discovery (Suleria et al., 2016). All over the world, the demand for seafood has increased owing to its health promoting perspectives and also help to fight against various health-related disorder including cardiovascular disease, cancer, alzheimer's and many other major illnesses (Suleria et al., 2015). Therefore, the role of aquaculture in ensuring a consistent supply of aquatic species for human consumption and screening of valuable bioactive molecules for novel drug discoveries cannot be overstated. Moreover, several toxic compounds, called biotoxins also bioaccumulate in fish, crabs, lobster, abalone or filter-feeding bivalves (shellfish), such as mussels, oysters, scallops and clams, and cause poisoning and their potential risks to food safety and/or market access of commercially-produced seafood are a growing concern in Australia (Murray et al., 2015; Ajani et al., 2017). Approximately 60,000 human intoxications occur per year worldwide, with an overall mortality of about 1.5% (Kantiani et al., 2010). Therefore, there should be some cost-effective food safety systems throughout the supply chain that reflect the degree of risk and to protect the health of seafood consumers. Screening and identification of marine bioactives and biotoxin can play significant role in aquaculture.

Speaker Biography

Hafiz Suleria is currently working as Honorary Fellow in the Diamantina Institute - Faculty of Medicine, The University of Queensland, Australia. Previously, he has been awarded an International Postgraduate Research Scholarship (IPRS) and Australian Postgraduate Award (APA) for his PhD research at UQ School of Medicine, the Translational Research Institute (TRI) in collaboration with Commonwealth, Scientific and Industrial Research Organization (CSIRO, Australia). His major research focus was on food science and nutrition particularly in screening of bioactive molecules - isolation, purification and characterization using various cutting-edge techniques from different plants, marine and animal sources followed by their in vitro bioactivity, in vivo, cell culture and animal modeling. He has published more than 40 peer-reviewed scientific papers in different reputed/impacted journals.

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