Abstract Title

Bioactive Substances from Regenerating Animals: A Challenging Journey to Drug Development

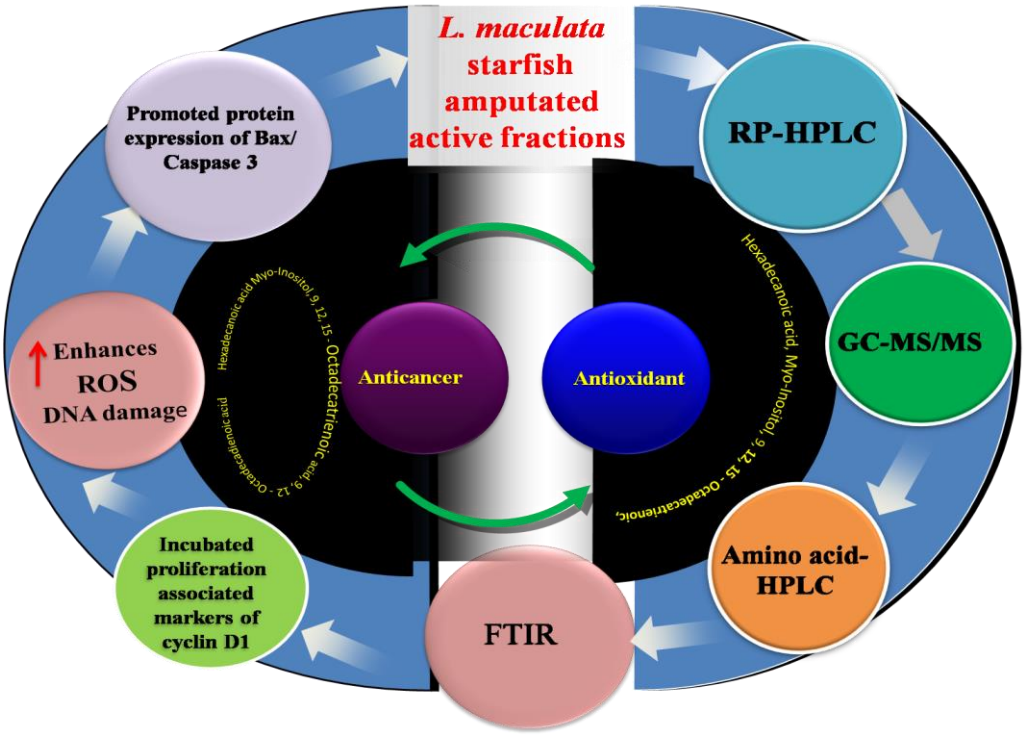
N. Prithiviraj*[1], Hui WANG*[1], Ning ning LIU[1], Jizhou YAN [2]

[1]*School Of Public Health, Shanghai Jiao Tong University,* [2]*Key Laboratory of Exploration and Utilization of Aquatic Genetic Resources ministry of education, Shanghai Ocean University, Shanghai 201306 , China*

In recent years, biologically active compounds are being isolated from tissues of various marine organisms by drug researchers. Preliminary data have shown that the active fractions from regenerating tissues of starfish were able to regenerate damaged tissue in zebrafish. As of now, the active fractions of the starfish have not been characterized yet. In this study, the starfish species *L. Maculata* was selected for screening of their bioactive wound healing compounds and biological properties were studied. The anti-proliferative effect of bioactive compound from *L. maculata* was observed in Human oral epidermoid carcinoma KB cells by MTT assay. The pharmacologically active constituents were characterized by using GC-MS/MS, RP-HPLC, and FTIR. Our key findings showed that the collected bioactive fraction obtained from HPLC induced apoptosis, enhanced ROS increment, increased oxidative DNA damage, inhibited proliferation associated markers of cyclin D1, promoted protein expression of Bax/caspase-3 and suppression of Bcl-2 expressions in KB cells. Supporting HPLC analysis, we found that 35 fractions identified by GC-MS/MS had well-known anticancer compounds: 5α-Cholest-7-en-3β-ol, Hexadecanoic acid, Myo-Inositol, 9, 12, 15 - Octadecatrienoic acid, 9, 12 - Octadecadienoic acid all of which could be responsible for the anti-proliferative effect of KB cells. Our data suggests that regenerated tissue extracts from L. *maculata* starfish unveils the presence of bioactive compounds that have a pharmacologically and nutraceutical values, which could pave the way for the development of a new drug in tissue regeneration research field.

Keywords: *Luidia malculata* , Antioxidant, cytotoxic activity, ROS, wound healing agents

Graphical Abstract



Professional Biography (100-150 words)

Dr. Prithiviraj Nagarajan from shanghai jiao tong university, shanghai, china has completed his PhD at the age 26 years from annamalai university and postdoctoral studies from Shanghai ocean university at age of 29. At present he is working as scientist in shanghai jiao Tong University, School of Medicine shanghai. Currently his area of research focusing **on** Stem cells and regenerative medicine from tissue regeneration animals and isolating marine and plant natural bioactive compounds for drug discovery. He has published more than 18 papers in reputed journals and published two monographs books in Lambert publication Germany, his has been serving as an two editorial board member of *International journal of pharmaceutical &biological archives and International Journal of Current Research in Chemistry and Pharmaceutical Sciences* .

Email Id:

prithivinaga@gmail.com

prithivnaga@yahoo.com



Paste your Photograph here

Presenter Name**: DR. PRITHIVIRAJ NAGARAJAN**

Type of Presentation: **Speaker**

Contact Number: **+86 13120659520**