## conferenceseries.com

4<sup>th</sup> World Congress on

## CHROMATOGRAPHY

August 07-09, 2017 | Rome, Italy

## Waterborne metabolites as indicators to the growth phases of macroalga Ulva (Chlorophyta) in aquacultures

Taghreed Alsufyani<sup>1</sup> and Thomas Wichard<sup>2</sup> <sup>1</sup>Taif University, KSA <sup>2</sup>Friedrich Schiller University, Germany

**F**ield experiments usually give ecologically relevant results contributing to understand the ecosystem deeply. In marine research, aquacultures are one of the most popular procedures used to carry out field experiments (figure a). In this study, the aquaculture of the green macroalga *Ulva mutabilis* was inoculated for the first time with freshly induced gametes (7-day old germlings) to culture large volume (200 L) with small axenic gametes. Two sets of aquaculture: defined community (inoculated with axenic gametes of *U. mutabilis* and two associated bacteria: *Roseovarius* sp. strain MS2. and *Maribacter* sp. strain MS6), and undefined community (inoculated of *U. mutabilis* axenic gametes only). In defined community *U. mutabilis* showed a healthy growth and development (figure b) whereas in undefined community *U. mutabilis* lost its ability for growing and developing and formed only callus-like colonies (figure c). Multivariate statistics of the GC/MS and LC/MS analyses along with acquisition of biological metadata revealed that the waterborne metabolites in defined community were affected qualitatively and quantitatively by the growth phases of *U. mutabilis* as was proven in previous study of bioreactor cultures (figure d, e).





Figure d, e: three separated groups based on the growth phases of U. mutabilis. red: non inducible phase, green: artificially inducible phase, Magenta: spontaneously inducible phase

## Biography

Taghreed Alsufyani is an Assistance Professor of Bioorganic Chemistry at Taif University. She received her Bachelor and Master degrees at King Abdul Aziz University, Jeddah, KSA. After that, she joined Chemistry department at Taif University where she got a scholarship to join PhD program at Friedrich Schiller University Jena, Germany, under the supervision of Dr. Thomas Wichard. By the end of 2014, she completed her PhD. In 2015, she was promoted to Assistant Professor at Taif University. Since 2015, she has established Algal Research Laboratory and began her investigation of algal chemical ecology as well as the applications of algae in biotechnology processes such as water treatment and bioenergy production.

Taghreed.alsufyani@gmail.com