Poster GC35

Cuticle Chemical Characterization of the Copepod *Eudiaptomus gracilis*

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Zooplankton play a key role in the aquatic food web, as they stand in-between the primary producers phytoplankton and higher trophic levels like fish and sea birds [1]. Tracking the motion and the migration of individual organisms is crucial to understand its biology and ecology [2]. A three dimensional tracking method was introduced by *Ekvall et.al (2013)*; by in-vivo labelling of freshwater zooplankton e.g. *Daphnia magna* using fluorescent quantum dots and then tracking the organisms via the fluorescent particles using a synchronized multiple camera system. However this protocol did not work for the freshwater calanoid copepod species *Eudiaptomus gracilis* which suggests the need for cuticle chemical characterisation of this copepod to find out the suitable chemistry for adsorption on the surface. A mild extraction for the cuticle lipids of copepod with hexane for 60s followed by extraction with chloroform for 60s - which differs in polarity - was sufficient to extract surface lipids without risk of extracting internal lipids [3]. The extracted lipids were analysed by Supercritical carbon dioxide chromatography combined with quadrupole-time of flight mass spectrometry ($ScCO_2$/QTOF) [4, 5, 6] . The analysis was done on an ODS column using gradient elution by supercritical CO_2 and methanol contains 0.1% ammonium formate as a co-solvent. The mass spectrometer data acquisition was in a positive ion electronspray ionisation (ESI) mode. The mass spectrometry data was used for identification of the lipid species.

References

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