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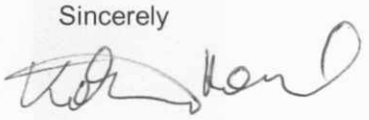
Report on the 4th International Singapore Lipidomics Symposium

The 4th ISLS organized by Markus Wenk was intended to bring researchers in the field of Lipidomics together. Naturally the focus of attendants was on Eastern Asia and Australia, but nevertheless also researchers from Europe and the US did attend. Generally, this extremely well organized event brought together many of the international leading experts in the field. An outstanding feature of the symposium was its reasonable size, about 100 attendants, which allowed for a lot of very fruitful interaction and in depth discussions of topics important to the field.

The first day of the symposium was covered by workshops, which left a lot more room for discussion than conventional presentations. The morning session focused on two hot topics of lipid research, ceramide and sterol metabolism. The afternoon session was strongly dominated by technology and bioinformatic topics. These issues, and particularly their global standardisation, are of utmost interest for the globalized lipidomic research community. Thus, many interesting discussions were fostered by the afternoon workshop presentations.
The second day started with a talk of the LipidMAPS coordinator Ed Dennis about data integration and then focused on localization technologies for lipids. Worth mentioning is the CARS technology presented by Andreas Zumbusch, which I deem a very promising tool for the future of subcellular lipid localization. The afternoon sessions were predominantly filled with technological approaches with much emphasis on mass spectrometry as the leading method in lipidomic research. The applications ranged from yeast to clinical settings.
Biophysics, lipid trafficking and cellular signalling networks was the focus of the third day's morning secession. In addition the host, Markus Wenk, had a talk about his research on mycolic acid. The afternoon saw a mixed session consisting mainly of topics centred on oxidized lipids and bioinformatics. Takao Shimizu held a very impressive presentation about eicosanoids. Furthermore Benhur Lee gave interesting insides on how oxidized membrane lipids enable virus-host membrane docking and also ton the therapeutical potential of this knowledge.
The fourth and last day of the meeting was dominated by lipidomic research applications on plants and algae. Highly interesting presentations were given by Ivo Feussner and John Harwood. While the first one gave an excellent talk about galactolipids and their implications of wound healing in the realm of plants, the latter one talked about oil storage properties of algae. The latter presentation was of particular interest, as it showed besides sound fundamental research also the economic and ecological potential of such organisms.

My presentation was located in the workshop on global standards for lipidomic research. This presentation showed the proposed shorthand nomenclature for lipids elaborated by the LipidomicNet for the first time to a wider audience. Unlike in the Genomic and Proteomic field, Lipidomics so far lacks any unified and officially accepted shorthand nomenclature for lipids. Beyond the officially accepted systematic naming of lipids in the Lipid MAPS Structure Database (LMSD), it is also important to have clear and unambiguous shorthand names for lipids, which alleviates publications and database construction. The presented proposal superimposes rules for shorthand nomenclature of lipids, based on different lipid shorthand names already around for more than a decade. The aim is to finally have a generally accepted 'unified language' in lipidomics, derived from the common sense lipid abbreviations historically grown. Another aim of this LipidomicNet based European initiative is to closely work together with the Lipid MAPS consortium in the US, and leave already existing and accepted nomenclature rules developed by this consortium untouched. Therefore our proposal is intended to be a complementary amendment to the Lipid MAPS endeavours. Naturally the interest, but also discussions stirred by this presentation were very high. Particularly official delegates from the Lipid MAPS consortium were highly interested in this proposal. The outcome of this meeting will be a closer coordination between the European and US lipidomic consortia in terms of a standardized lipid nomenclature. In fact, this presentation started a process of tight collaboration on standardization issues between the two globally leading lipidomics initiatives. Due to this, the now emerging joint nomenclature project does not only interconnect European lipidomic centres as would be envisioned by the Eurocores program, but connects beyond that the biggest lipidomics initiatives in Europe and the US on issues which urgently need to be solved in a concerted manner for further progress in the age of mass data and bioinformatics.

Sincerely



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