



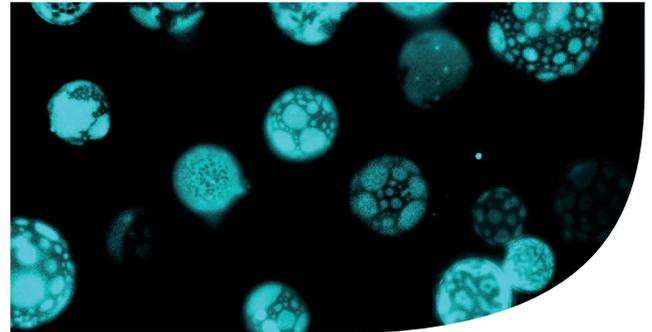
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CUSTOMER REFERENCE

Academic research: lipid analysis of various model organisms

Lipid analysis of mammalian cell and giant plasma membrane vesicles



The Levental Laboratory of Membrane Biology at the University of Texas – Houston Medical School focuses on membrane structure, specifically the partitioning of eukaryotic cell membranes into functional domains by preferential interactions between membrane lipids and proteins. For its research, the Levental Laboratory of Membrane Biology was interested in the quantitative analysis of the lipid composition of mammalian cells and isolated plasma membrane derived from them. With its Shotgun Lipidomics technology, Lipotype delivered its one-of-a-kind, detailed, quantitative information on lipid structure and composition, revealing the role of lipids in stem cell differentiation and informing future experiments. Based on this information, the Levental Lab found that dietary fats can influence stem cell fate, with saturated fat promoting differentiation into fat cells, while omega-3 fish oils inhibited fat formation and promoted differentiation into bone. These observations imply that dietary factors, specifically the amount and composition of ingested fat, have roles far beyond simple metabolism. This fruitful collaboration between the Levental Lab and Lipotype demonstrates the power of lipid analysis for both descriptive and predictive observation on clinically relevant phenomena.

PUBLICATIONS:

Polyunsaturated Lipids Regulate Membrane Domain Stability by Tuning Membrane Order – *Biophysical Journal*, 2016

KR Levental, JH Lorent, X Lin, AD Skinkle, MA Surma, EA Stockenbojer, AA Gorfe, I Levental

ω -3 polyunsaturated fatty acids direct differentiation of the membrane phenotype in mesenchymal stem cells to potentiate osteogenesis – *Science Advances*, 2017

KR Levental, MA Surma, AD Skinkle, JH Lorent, Y Zhou, C Klose, JT Chang, JF Hancock, I Levental

About Lipotype

LIPOTYPE is a spin-off company from the Kai Simons and Andrej Shevchenko labs of the world-renowned Max-Planck-Institute of Molecular Cell Biology and Genetics in Dresden, Germany. Drawing on many years of cutting edge research experience, Lipotype delivers comprehensive, absolutely quantitative lipid analysis services for clinical and biological samples on a high-throughput scale. Lipotype offers high quality lipid analysis services for a wide range of customers and applications including biomarker identification for clinical researchers, pharma and biotech companies, functional food development for the food industry, claim support for the cosmetics industry, as well as for the small-scale profiling needs of academic researchers.

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We offer high quality lipid analysis services for a wide range of customers and applications:



Biotech and pharma industry, clinical research

Drug discovery (mode-of-action studies, target validation, effect of delivery system on lipid metabolism), biomarker identification (pharmacodynamic, pharmacokinetic, CDx), clinical screening and diagnostics



Food industry

Intervention studies for development of functional food/nutraceuticals



Cosmetics and Dermatology

Cosmetic claim support, topical drug development, development of personalized cosmetics



Academic research

Lipid analysis of various model organisms

