Skin Diseases & Skin Care

Skin lipid metabolism

Zhang Wei1

Department of Computer Science, Harbin Institute of Technology, Harbin, China

E-mail: cheungwei529@yahoo.com

ABSTRACT

Skin lipids, combine of, keratinocyte, sebocyte, and microbe- derived lipids, intensely effect to the skin status by various mechanisms. Those are Physical chemistry function, Biochemistry function, and Micro ecology function. Lipids are vital metabolites that ensure many essential cellular functions, including energy metabolism, enzyme activation, signal transduction, cell proliferation, transmembrane transport, differentiation and apoptosis. They are separated into classes and subclasses based on the head group and the type of linkage among the aliphatic chains and head groups. Classification system providing by lipid metabolites and pathways strategy is a web portal intended to be a entry to lipid omics resource. Those subclasses are Glycolipids (GL), fatty acids (FA), sphingolipids (SP), saccharolipids (SL), prenol lipids (PR), sterol lipids (ST), glycerophospholipids (GP), and polyketides (PK).Lipids possibly will be defined as amphipathic or hydrophobic small molecules those originate completely or in part through carbanion-based compressions of thioesters or by carbocation based compressions of isoprene units.

Lipid composition can appear direct readout changes of lipid metabolism and cellular metabolic status is one significant factor in different types of disease pathogenesis those are several cancers, neurodegenerative diseases, metabolic diseases, and skin diseases.

Mainly in dermatological research, lipid education has enlarged attention meanwhile its position concerning skin status and the new development in lipid omics analytical power. Skin lipids are produced by skin microbiome, keratinocyte, and sebocyte. Sebocyte resulting lipids are manufactured by sebaceous glands and concealed to the external of the skin. Main mechanisms are fatty acid, squalene triglyceride, cholesterol, wax ester, and cholesterol ester, etc. Keratinocyte resulting lipid precursors were synthesized via keratinocytes and concealed in the method of lamellar bodies, finally provide lipid precursors and lipid synthases into extracellular space of stratum corneum, tracked via lipid precursors are catalyzed via lipid synthases to produce stratum corneum lipids, mainly together with ceramide, fatty acids and cholesterol. Supplementary, skin microbiome is significant origin of skin lipid that would not be unnoticed. Skin is colonized via a diverse milieu of microbes, most of which yields lipids to skin throughout the metabolism, those are short-chain fatty acids. Skin lipids function is upholding barrier function. Human skin is a huge organ that protects the body in contradiction of spurs that influence human wellbeing, skin lipids are one of the greatest significant compounds in upholding the barrier function.

Since for the significant character of skin lipids in the skin state, the mechanisms are widely studied in dissimilar features. Though, further study needs the papers of lipid components not for classes and/or subclasses, but also into separate species. Such demands have catalyzed the appearance of lipid omics, these are allows large-scale study of lipids by means of the study of analytical chemistry, such as Ultra-performance liquid chromatography quadrupole time-off light mass spectrometry and Desorption electrospray atmospheric ionization-mass spectrometry. Powerful analytical aptitude and high-throughput way of the tools and techniques are intensely effective than Thin layer chromatography and High performance liquid chromatography. For instance, HPLC-QTOF-MS was active to examine the lipid dysfunction. LC–MS was useful to examine the arrangement variation of epidermal lipids correlating with Staphylococcus aureus settlement status in Atopic Dermatitis. Of late, lipid omics, that is UPLC-QTOF-MS, is used to differentiate changes among diverse types of human skin state. Centered on statistical approaches those are principal component analysis, lipids with significant differences were obtained. Then some biochemistry and molecular biology experiments are employed to study lipid structure and function to validate biomarker. Additional, the integration of lipid omics data with additional omics strategies those are microbiomics can be developing the power to learning mechanism of skin lipid influencing skin status.

Keywords: Skin Cancer, Skin Care, Melanoma, Squamous cells