Lipidomics is the study of lipids, a group of biological molecules that play important roles in cell structure, energy storage, and signaling. Lipids include a diverse group of molecules, such as fatty acids, phospholipids, sphingolipids, and sterols.

Lipidomics seeks to identify, quantify, and understand the biological functions of lipids and their interactions with other cellular components, such as proteins and nucleic acids. This information can provide insights into the regulation of cellular processes, such as membrane biogenesis and signaling, and can inform the development of new therapeutic strategies for diseases such as cancer, cardiovascular disease, and neurodegenerative disorders.

Lipidomics typically involves the use of mass spectrometry-based techniques to quantify changes in the levels and composition of lipids in cells, tissues, or organisms under different conditions. This information can be integrated with other omics data, such as transcriptomics and proteomics, to provide a more comprehensive understanding of cellular processes.