Lipids are important effectors of health and disease. Recent development of analytical methods for the separation and identification of lipids has allowed for the identification of lipid biomarkers and the profiling of lipids. In the current study, we have attempted to develop sensitive HPLC/MS methods for the determination of endocannabinoid and their biosynthetic precursors in the sub-regions of adult hippocampus.

The Challenge

In the current study, we have attempted to develop sensitive HPLC/MS methods for the determination of endocannabinoids and their precursors in the sub-regions of adult hippocampus.

Materials & Methods

LC-MS Analysis of Lipids


2. Astarita, G; Ahmed, F and Piomelli, D. Identification of biosynthetic precursors of endocannabinoids from Sigma-Aldrich (St. Louis, MO) and Nu-Chek Prep (Elysian, MN).

3. Injection volume: 0.02 µL.

4. Phospholipase D (PLD) and Fatty Acid Amide Hydrolase (FAAH) were added to the reaction mixture at 200 units of PLD and 100 units of FAAH per 30 µL of reaction mixture.

5. The samples were analyzed using an Agilent 1200 HPLC system equipped with an electrospray ionization interface were used for the initial method development for lipid analysis with Eclipse XDB C18 (75 µm x 75 mm) as the analytical column and an Eclipse XDB C8 (3.5 µm 80 Å, 163 nL) as the enrichment column. The HPLC-MS was connected to the MS (Agilent Technologies 6530 Q-TOF mass spectrometer) using standard Agilent XEDS-5000 nanoflow LC/MS system with a homebuilt nano-LC/MS interface for the initial method development. The HPLC-Chip system consisted of an Eclipse XDB C18 (3.5 µm 80 Å, 75 µm x 75 mm) as the enrichment column. The HPLC-Chip was connected to the MS using the Agilent Technologies ChipConformer system.