HPLC METHOD DEVELOPMENT FOR LC/MS: TRADITIONAL APPROACHES AND EMERGING TRENDS

1. **Introduction and Background of LC/MS/MS in the Bioanalytical Laboratory**
   - 1.1. Brief History of Coupling HPLC and Mass Spectrometry
     - 1.1.1. Early Pitfalls of LC/MS/MS without Good HPLC Separations
     - 1.1.2. Why is a separation important with the selectivity of MS?
       - 1.1.2.1. Ionization effects in the source of the MS
       - 1.1.2.2. Separation of labile molecules from parent
     - 1.1.3. Separation of isobaric drugs or metabolites

2. **Development of LC/MS/MS Methods Based on Structure of Molecule**
   - **2.1. What is important in the structure of the analyte?**

3. **The Latest Emerging Trends in HPLC/MS/MS Bioanalysis**
   - **3.1. The advantages of UPLC**
   - **3.2. The advantages of using SPE as a orthogonal technique**
     - **3.2.1. Removal of phospholipds**
     - **3.2.2. Micro-SPE**
   - **3.3. Current automation tools**

4. **Typical Problems, Solutions and Troubleshooting HPLC for MS Detection**
   - 4.1. Matrix Interferences and Ion-Suppression in LC/MS
     - 4.1.1. How to determine the occurrence of ion-suppression
     - 4.1.2. How to minimize ion-suppression
   - 4.2. How to improve chromatographic peak shape
   - 4.3. How to improve chromatographic retention
   - 4.4. LC/MS Survival Kit-Tips and Tricks for What you really need to know
     - 4.4.1. Identifying when something goes wrong

5. **Dried Blood Spot Analysis: Method Development and Validation Approaches in the LC/MS/MS Bioanalytical Laboratory**

6. **Tutorial in LC/MS Method Development**
   - 6.1. Dissecting some case studies for specific problems encountered by attendees
   - 6.2. Example method development schemes based on select molecules

7. **Questions and Answers**