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Bioanalytical method validation using LC-MS/MS

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Liquid chromatography-mass spectrometry (LC-MS/MS) is a technique that uses liquid chromatography (or HPLC) with the mass spectrometry. LC-MS/MS is commonly used in laboratories for the qualitative and quantitative analysis of drug substances, drug products and biological samples. LC-MS/MS has played a significant role in evaluation and interpretation of bioavailability, bioequivalence and pharmacokinetic data. This presentation reviews the most recent advances in sample preparation, separation, different types of cartridges used and steps involved in bioanalytical method development and validation of drug molecules as per US-FDA guidelines. Newly introduced techniques such as ultra performance liquid chromatography (UPLC) with small particles (sub 2 μm) provide better efficiency when compared to other chromatographic techniques. Solid phase extraction (SPE) is the commonly used technique for sample preparation to reduce both time and labor in bioanalysis. Further, this presentation also discusses about the matrix effect in LC-MS/MS analysis and how to reduce matrix effect in method development.

Biography

Bijay Aryal has completed his Ph.D. at the age of 29 years from Dankook University Medical Center and postdoctoral studies from NAST. He is the associate Professor of Clinical Pharmacology. He has published more than 40 papers in reputed journals and 2 books from Lambert Publishing Ltd. He is serving as editorial board member and reviewer of many international reputed journals.

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