

Matrix effects: Termite of analytical methodologies

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Analytical methodologies, particularly LC-MS/MS techniques, play a critical role during the pharmacokinetic studies. So, it is very important to have an accurate and precise bioanalytical method before any pharmacokinetic analysis. As termites weaken the wooden structure by damaging internally, similarly, Matrix effect (ME) also plays a detrimental role in any LC-MS/MS analysis by generating unreliable and misleading data. ME is a very common term, often appearing during bioanalytical method development. ME is defined as the irregular response of ions during any LC-MS/MS analysis, resulting ion suppression or enhancement. ME is a major concern to any bioanalytical scientists. ME is noticed in almost 90% of samples using blood, plasma, serum or any other matrix. Careful study and subsequent elimination or minimization of matrix effect can safeguard the study from generating erroneous data. Earlier different regulatory authorities only recommended studying the matrix effects during bioanalytical method development and validation, but looking to its detrimental and misleading effect on analytical data, now-a-days they have made it compulsory to study, evaluate and report the matrix effect during every bioanalytical method and its submission to any regulatory bodies, which shows the increasing importance of ME. This opens up the scope of detailed research to analytical scientists. In recent times, scientific community is focusing more and more towards development of new strategies to minimize/ overcome the ME related issues. Moreover, bioanalysis remains a vital practice in various steps of drug discovery and development, so is Matrix Effect. So it is high time that scientists take a conscious call to address the issue of ME rather than ignoring it as ME has the termite effect on analytical methodologies.

Biography

Chinmoy is presently associated with Cadila Pharmaceuticals Limited, as a research scientist in the Bioanalytical department. He has an experience of over 8 years in the pharmaceutical research and development. He has completed his Ph.D. in analytical chemistry from Jiwaji University, Gwalior. He has 15 international publications in his credentials till date in reputed medical and chromatographic journals like American journal of cardiovascular drugs, Chromatographia, Bioanalysis etc. He is working as a reviewer in many reputed international journals. He has privileged to be enlisted in Marquis Who's Who 2011 edition under the category of "Significant contribution in the field of analytical chemistry". His objective is to make significant contribution in the field of Chemistry especially in Analytical Chemistry.

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