Abstract:

Background: Green, accurate and rapid methods, namely liquid chromatography-tandem mass spectrometry (LC-MS/MS) and thin layer chromatography (TLC)-densitometric methods, were developed for determination of amlodipine besylate (AML) and celecoxib (CEL) in presence of its process-related impurities, 4-methylacetophenone (MAP) in pure and formulated tablets.

Results: LC-MS/MS was achieved on ZORBAX Eclipse Plus C18 columnusing methanol: aqueous solution of 5 mM formic acid (95:5 v/v).High sensitivity with low LOD values0.00028, 0.00027 and 0.0003 for amlodipine, celecoxib and 4-methylacetophenone, respectively were obtained.While,TLC-densitometric was established using methanol: water: ammonia (70: 25: 1.5, by volume). Good linearity was obtained in the range of 0.1-10 µg/band, 1-150 µg/band and 0.01-2 µg/band for amlodipine, celecoxib and 4-methylacetophenone, respectively.

Conclusion: The proposed method validation was achieved according to ICH guidelines. Those methods possess advantages of being ecofriendly methods which permit their application in quality control laboratories