

Methylation of a cyclic peptide during preparation for Mass Spectrometry.

Lisa Hodgson, Kai Robinson, and Peter Cullis

Department of Applied Chemistry, RMIT University, Melbourne.

A cyclic undecapeptide indicated molecular weights that differed by 14 daltons when prepared using different methods. Further investigation showed that preparations of solutions using methanol or methanol/acid and water resulted in detection of two molecular ions, the second of which was 14 daltons higher in mass. Samples prepared in acetonitrile/water solution show on a single peak.

High resolution ESI-MS showed the mass increased corresponded to addition of CH_2 to the original peptide. Collisional activation of the molecular ions formed by ESI were inconclusive due to low fragment ion intensities. MALDI-TOF post source decay (PSD) experiments provided intense molecular ions and the necessary fragment ion intensities to show that the higher mass molecular ion was formed by methylation of the glutamic acid residue in the reported cyclic peptide structure.
