

Abstract

In this bachelor thesis, ADP and ATP samples were analysed and detected with HPLC-MS/MS method. Approximate limit of detection (LOD) for these particular substances were found and their values were compared with the LOD values published in the literature obtained via the same methods and under very similar experimental conditions. Our limits of detection for nucleotides were comparable with the limits described in the literature. Mass spectrometry analysis was performed in the positive and the negative mode of multiple reaction monitoring analysis and electrospray was used for the analyte ionization. The optimal conditions for high performance liquid chromatography of ATP and ADP analysis were acquired on a ZIC - HILIC column with the mobile phase of 75:25 (v/v) acetonitrile / 10 mM ammonium acetate. Ammonium acetate buffer was adjusted to pH of 7.15 and the separation was done under the isocratic elution.