

**Determination of azithromycin, clarithromycin, sulfamethoxazole and trimethoprim residues in pharmaceutical wastewater plants by liquid chromatography tandem mass spectrometry**

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**Summary:** *A LC-MS/MS method was developed for determination of clarithromycin, azithromycin, trimethoprim, and sulfamethoxazole in wastewater from pharmaceutical plants. The antibiotics were extracted from samples using OASIS HLB 6cc Vac Cartridge. Separation was carried out in Agilent Zorbax Eclipse XDB - C18 (150 mm × 3 mm; 3.5µm) column. Mobile phase consists of 0.1% HCOOH in acetonitrile and 0.1% HCOOH in water. Detection was performed by mass spectrometry with a triple quadrupole using positive electrospray ionization and Multiple Reaction Monitoring mode. The recoveries ranged between 84 and 108.6% with RSD less than 11% and the limits of detection varied between 0.084 and 0.10 ppb. The validation results showed that method is suitable for the analysis of antibiotics in wastewater samples.*