**Supplementary Tables and Figures**

**Supplementary Table 1**. System validation. Antibiotics, determination coefficient (R2), %RSD, LOD, LOQ.

**Supplementary Table 2.** Intraday and Intermediate precision. System validation/ Antibiotics

**Supplementary Table 3**. Chromatographic parameters.

**Supplementary Table 4.** Set of experiments to probe extraction efficiency of SPE extraction.

Supplementary Figure 1. Antibiotic analysis. Chromatographic separation in different columns: A) Atlantis T3, B) Luna C18 and C) Synergi C18

Supplementary Figure 2. System validation. Calibration curves a) AMOXI, DOXI, SDX and TYL b) SNA, TMP, OXI, TETRA and SMX c) CIPRO and ENRO.

**Supplementary Figure 3**. Method validation. Matrix effect. Calibration curves in water and in river water (matrix).