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Development of a method for quantitative metabolite profiling of pharmaceutical drugs using HPLC-ICP-MS following pre-column derivatization of their amino and hydroxyl groups using 4-aminopyridine as a model compound

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Peaks: 1: 4-aminopyridine; 2: 3-hydroxy-4-aminopyridine; 3: derivative of 4-aminopyridine; 4: derivative of 3-hydroxy-4-aminopyridine

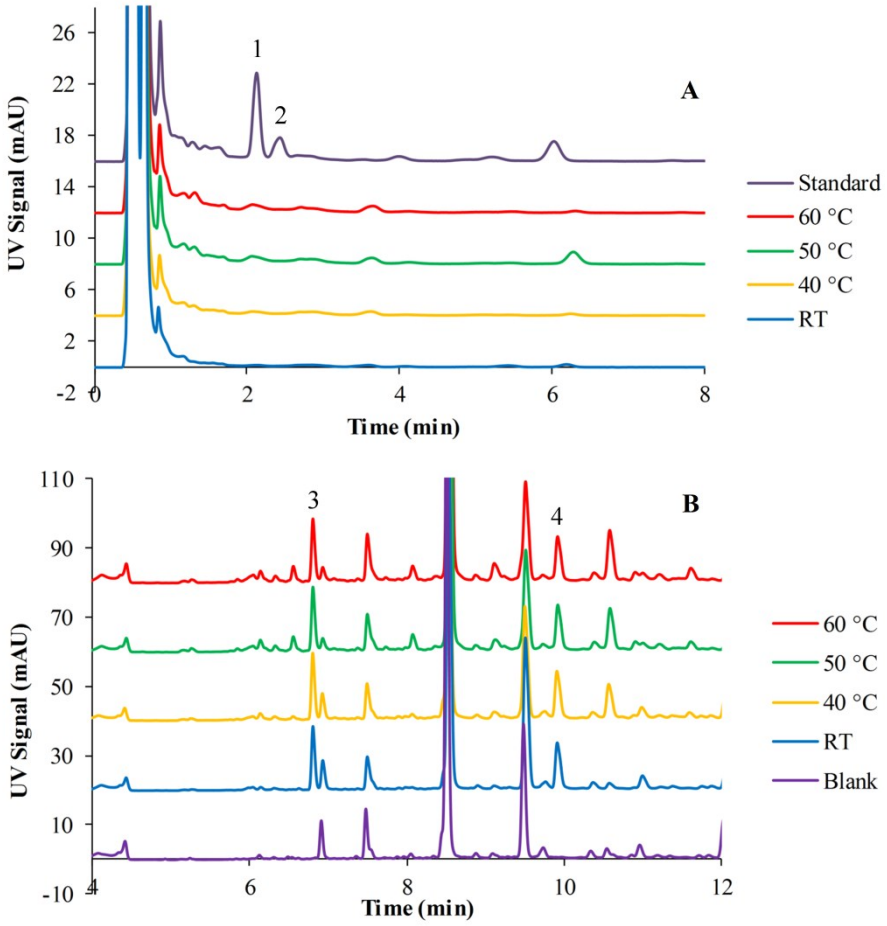

Figure S-2 Investigation of the effect of the reaction time: HPLC-UV chromatograms of 4-aminopyridine and 3-hydroxy-4-aminopyridine standard, derivatized blank plasma and derivatized spiked plasma at room temperature for 15 min, 30 min and 60 min reaction time for monitoring the starting compounds (A) and their derivatives (B) in the derivatized plasma sample.

Peaks: 1: 4-aminopyridine; 2: 3-hydroxy-4-aminopyridine; 3: derivative of 4-aminopyridine; 4: derivative of 3-hydroxy-4-aminopyridine

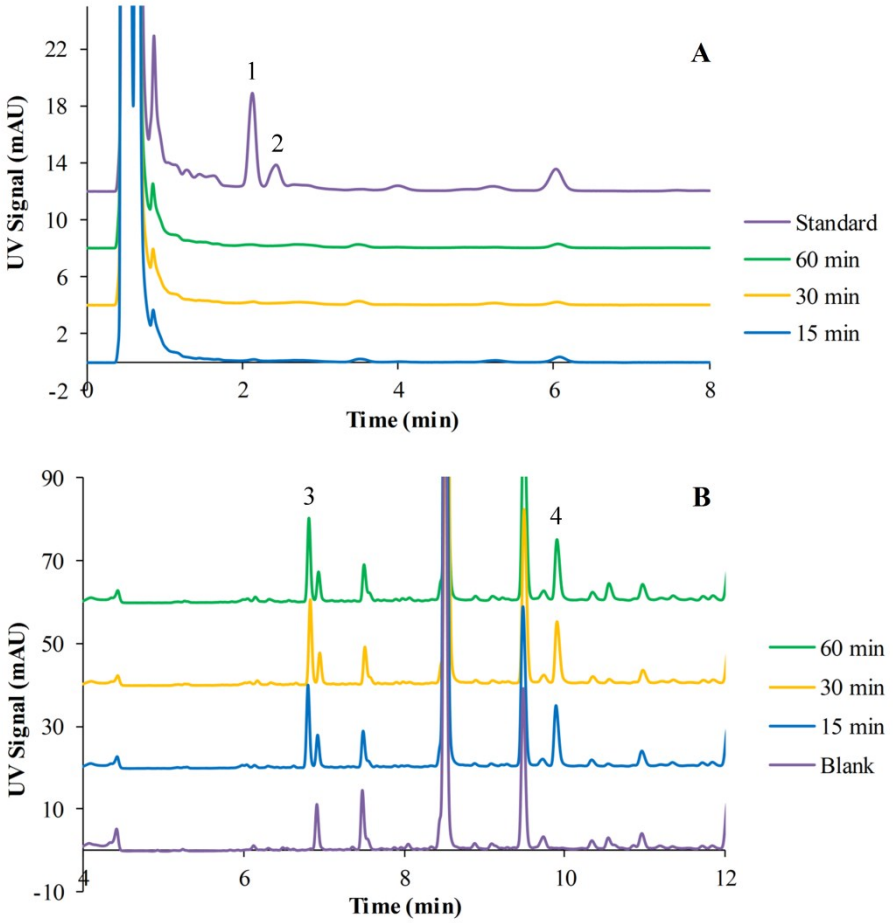

Figure S-3 Investigation of the effect of the TEA concentration: HPLC-UV chromatograms of 4-aminopyridine and 3-hydroxy-4-aminopyridine standard, derivatized blank plasma and derivatized spiked plasma with 0.4 mM, 1 mM, 2 mM and 4 mM of TEA solution for monitoring the starting compounds (A) and their derivatives (B) in the derivatized plasma sample.
Peaks: 1: 4-aminopyridine; 2: 3-hydroxy-4-aminopyridine; 3: derivative of 4-aminopyridine; 4: derivative of 3-hydroxy-4-aminopyridine

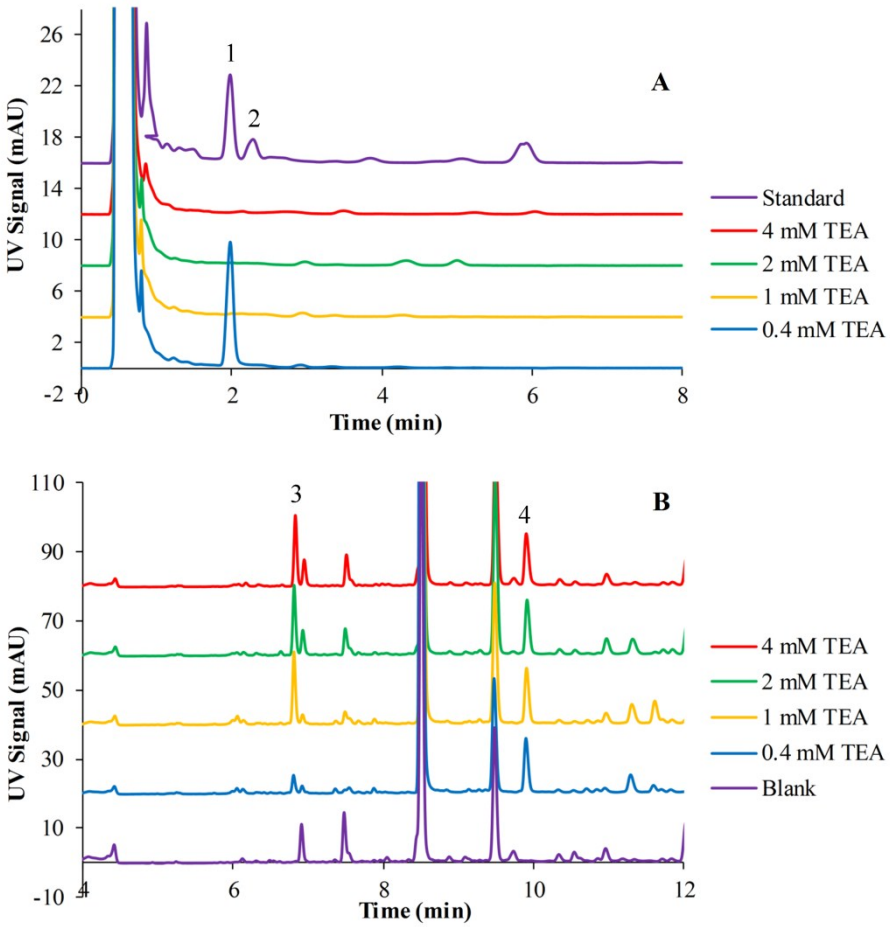

Figure S-4 Investigation of the effect of the reagent concentration: HPLC-UV chromatograms of 4-aminopyridine and 3-hydroxy-4-aminopyridine standard, derivatized blank plasma (A) and derivatized spiked plasma (B) with 0.4 mM, 1 mM, 2 mM and 4 mM of 4-IC solution for monitoring the starting compounds (A) and their derivatives (B) in the derivatized plasma sample.

Peaks: 1: 4-aminopyridine; 2: 3-hydroxy-4-aminopyridine; 3: derivative of 4-aminopyridine; 4: derivative of 3-hydroxy-4-aminopyridine

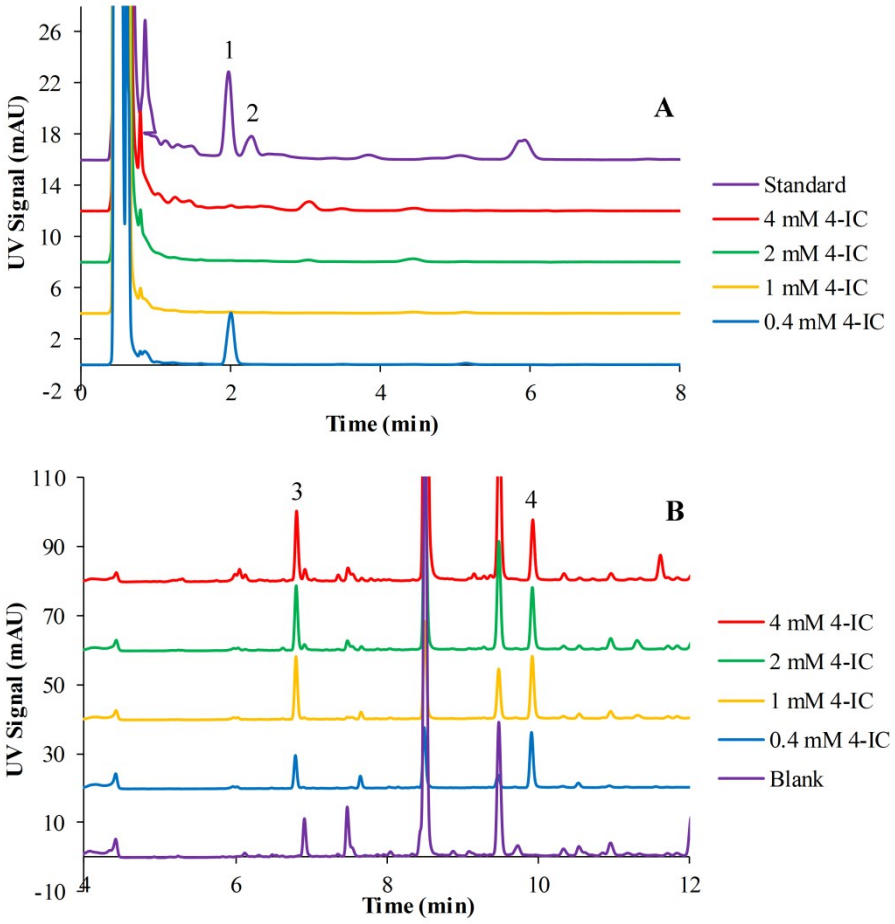

Figure S-5 Investigation of the effect of the spray chamber: iodine chromatograms of a derivatized spiked plasma sample with a Scott-type spray chamber (blue) and with a cyclonic spray chamber.

Peaks: 1: derivative of 4-aminopyridine; 2: derivative of 3-hydroxy-4-aminopyridine