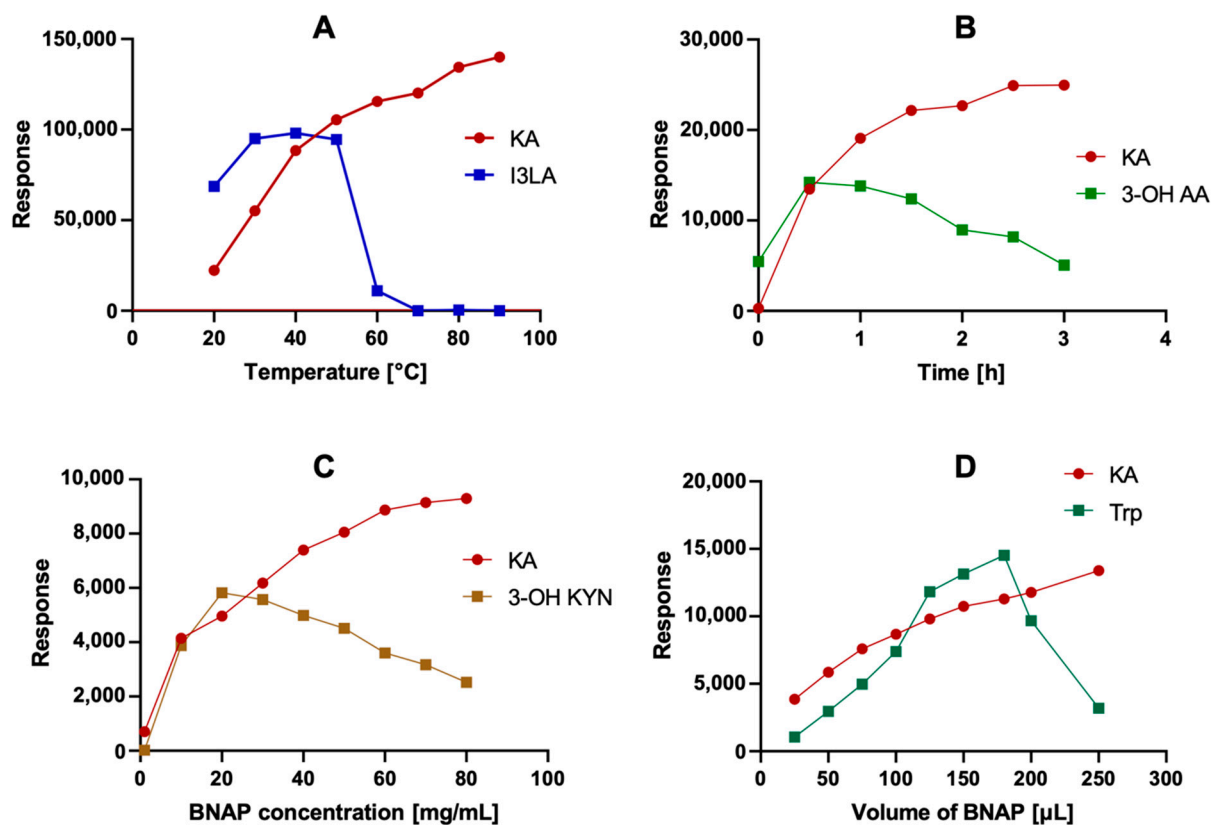


## Supplementary material

**Figure S1** Illustration of BNAP derivatization optimization of **A**: temperature; **B**: time; **C**: concentration of BNAP and **D**: volume of BNAP.



**Table S1** Chose of suitable stationary phase and optimization of mobile phase and column temperature evaluation based on tailing factors ( $T_F$ ) of three representative derivatives 5-OH IAA, I3LA and QA.  $T_F$  are presented as mean value of three measurements.

Column	Tailing factor ( $T_F$ )		
	5-OH IAA	I3LA	QA
HSS T3 (2.1×100 mm)	1.06	1.85	1.15
CSH C18	0.69	1.49	1.75
CORTECS C18+	0.76	0.93	1.33
Kinetex F5	1.58	1.58	peak splitting
HSS T3 (2.1×50 mm)	1.10	0.81	1.58

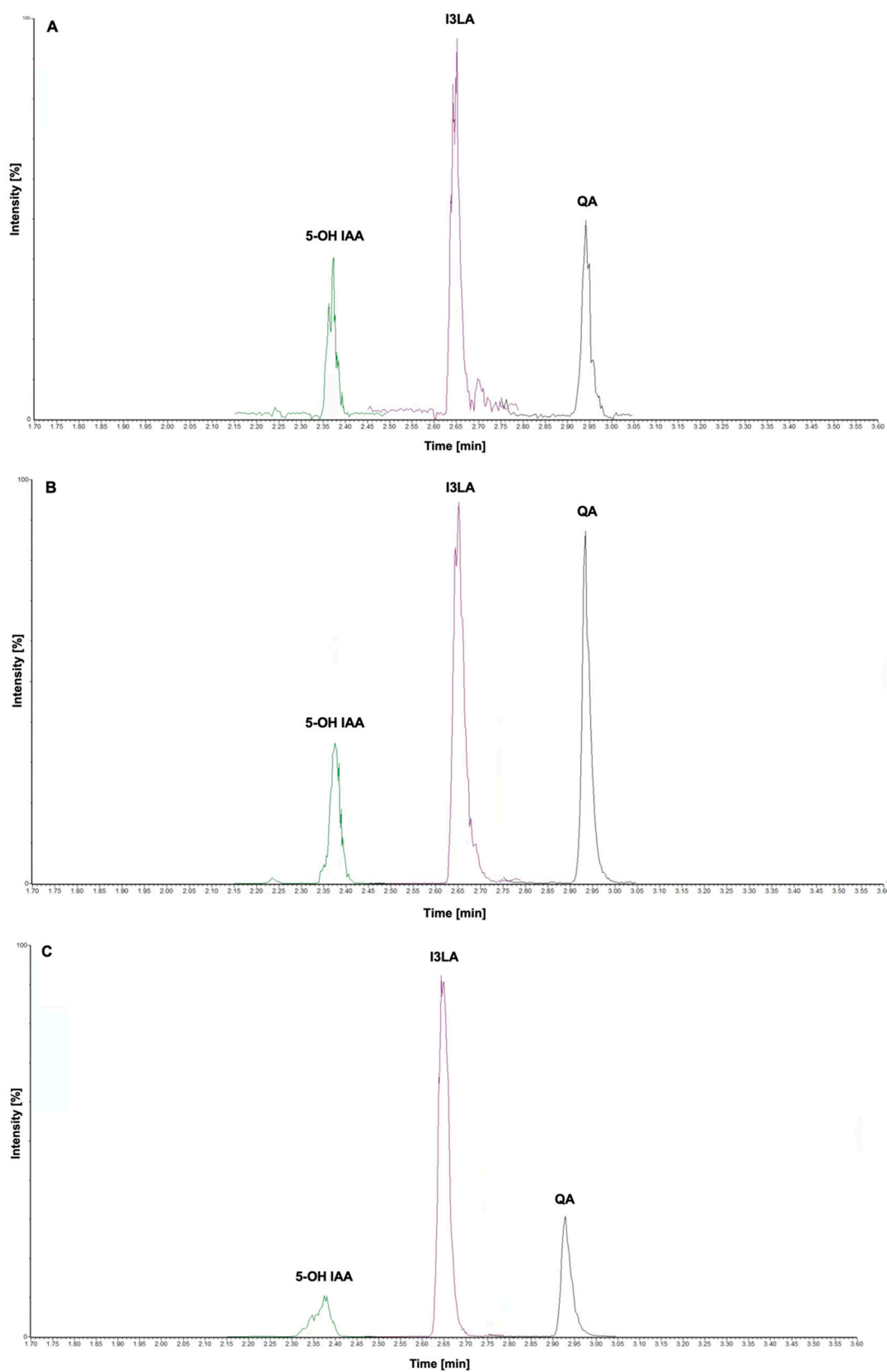
  

Mobile phase	Tailing factor ( $T_F$ )		
	5-OH IAA	I3LA	QA
0.1% FA (pH 2.5)	1.06	1.62	1.15
0.1% FA (pH 3)	0.88	1.70	1.42
0.1% FA (pH 4)	0.94	1.93	1.25
0.15 FA + 10 mM AF (pH 3)	0.82	1.69	1.50
0.5% FA (pH 2.2)	1.00	2.10	1.50

Column temperature [°C]	Tailing factor ( $T_F$ )		
	5-OH IAA	I3LA	QA
30	1.06	1.85	1.10
35	0.98	2.44	1.10
40	1.23	2.12	1.69

**Figure S2** UHPLC-MS/MS chromatograms (without peak smoothing) of injection volume optimization for three representative derivatives 5-OH IAA, I3LA and QA; **A:** 1  $\mu$ L; **B:** 5  $\mu$ L; **C:** 10  $\mu$ L.



**Figure S3** Statistical evaluation of quantification of Trp metabolites in female (A) and male (B) plasma samples from AD patients and age matched CTRLs \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; ns - nonsignificant.

