

SUPPLEMENTARY MATERIALS

**A rapid and improved method for the determination of ethyl carbamate
in foodstuffs of different matrices**

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FIGURES:

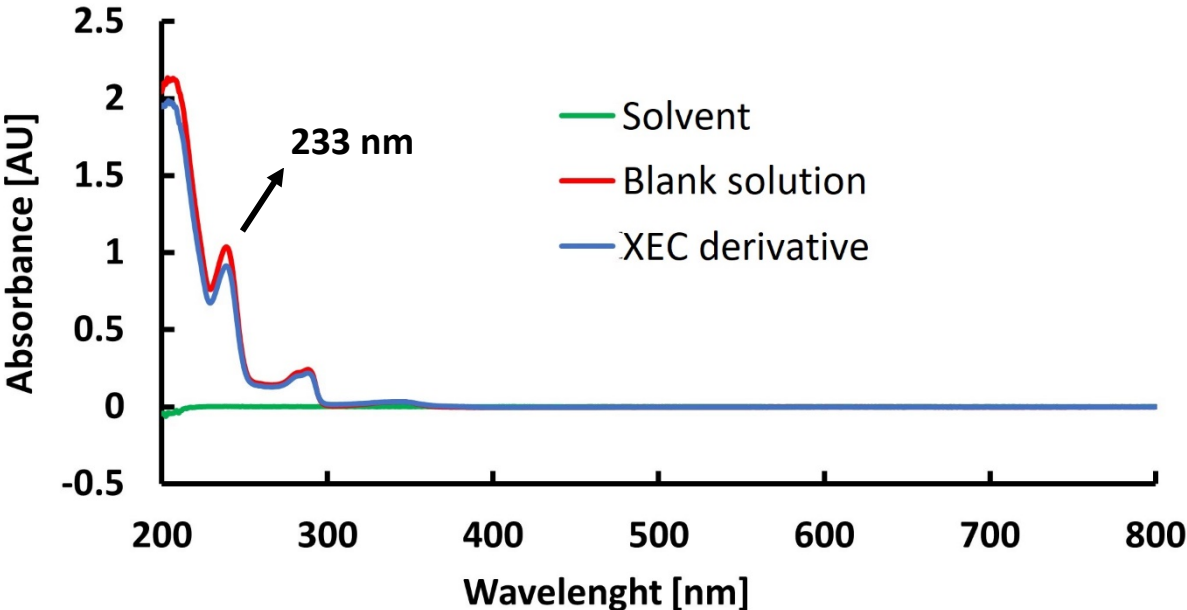


Figure S1 UV/VIS spectra of solvent (40% EtOH), blank solution (derivatization mixture without analyte), and XEC derivative.

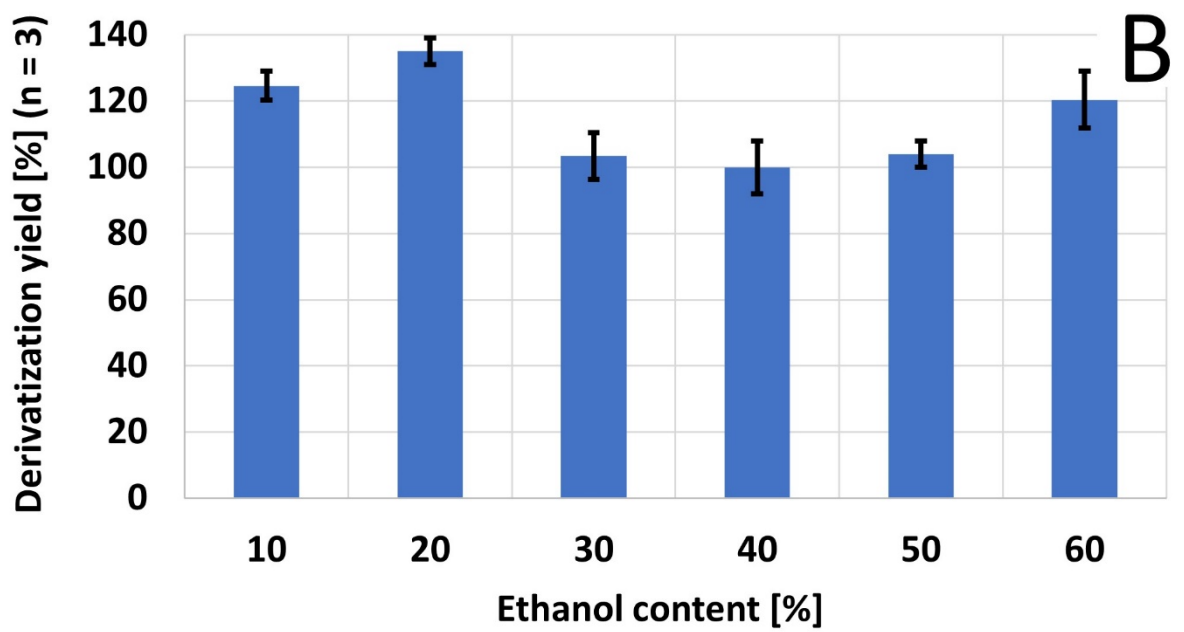
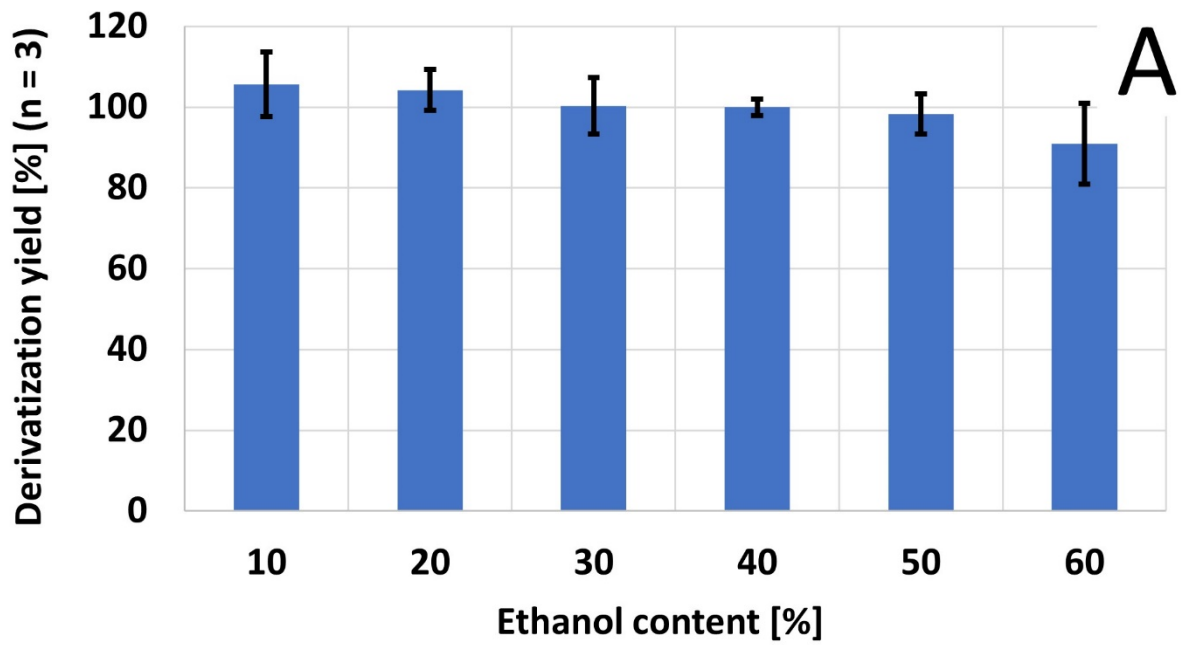


Figure S2 Dependence of derivatization yield on the concentration of ethanol in a standard solution with a concentration of 1300 µg L⁻¹ EC (A) and in a real sample of plum spirit (B).

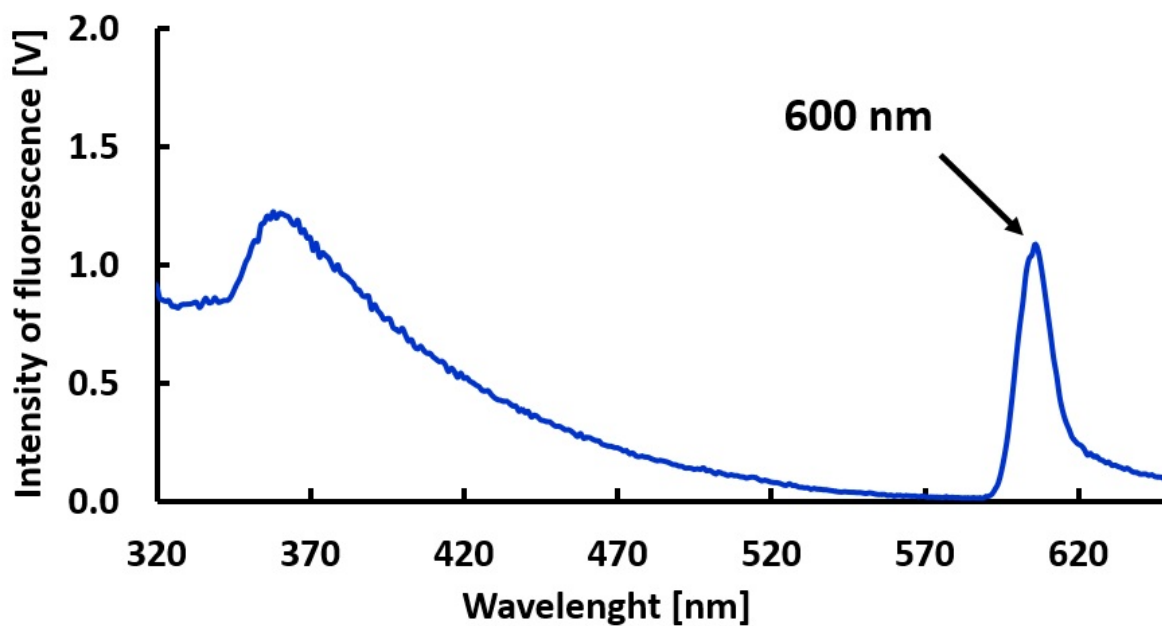


Figure S3 Emission spectrum of the XEC derivative measured at $\lambda_{EX} = 233$ nm.

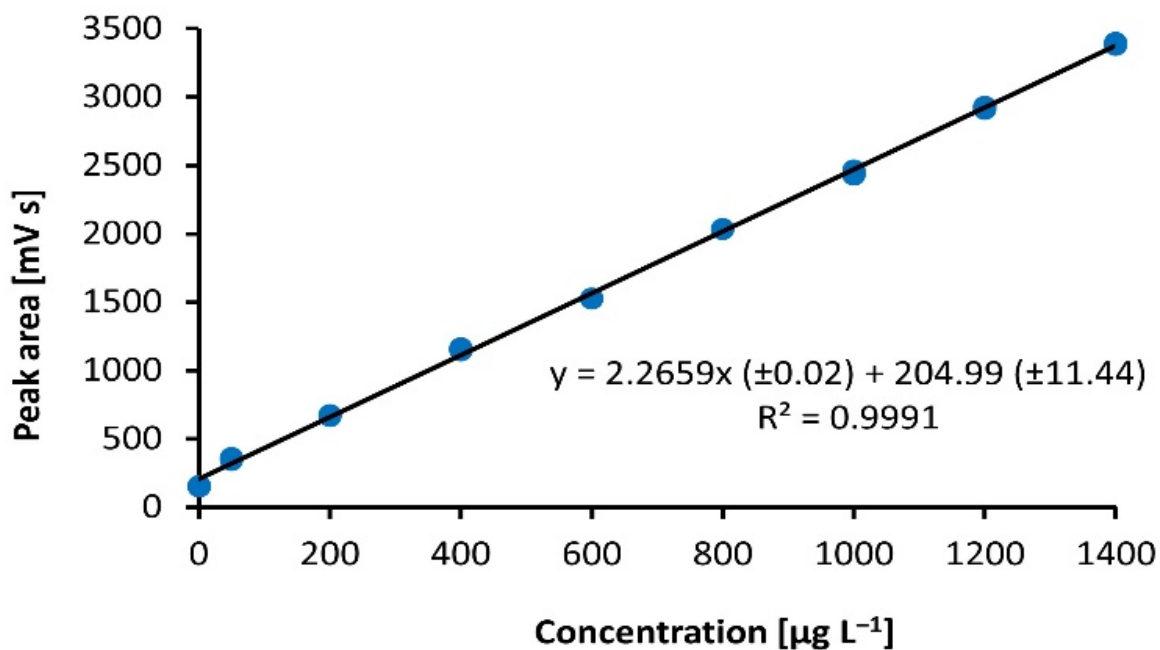


Figure S4 Calibration dependence including regression equation (with corresponding standard deviations) and coefficient of determination.

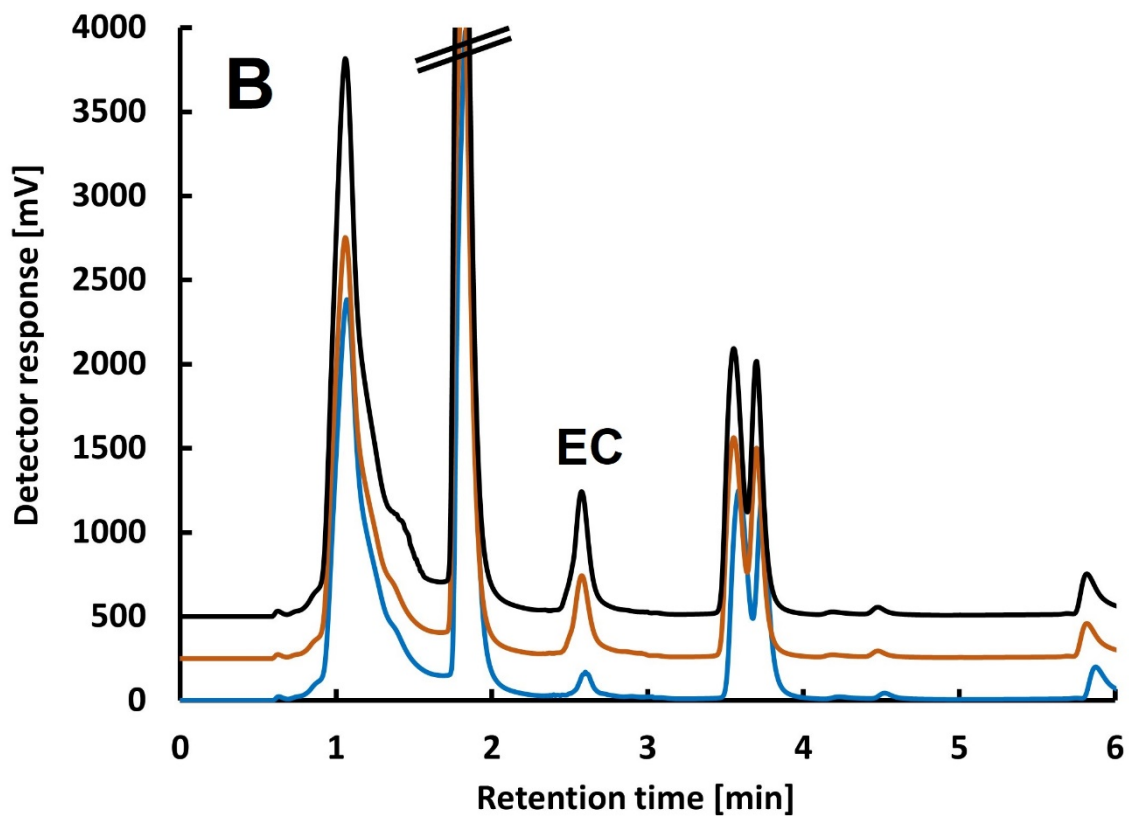
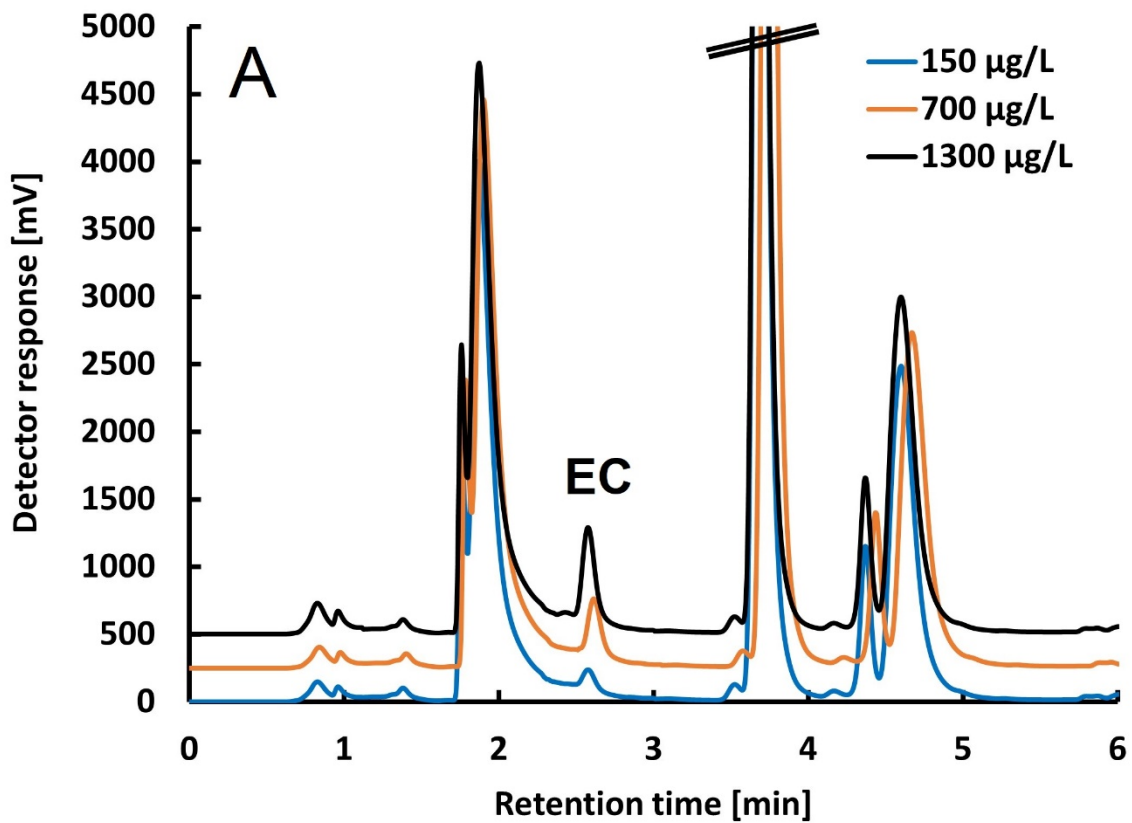


Figure S5 Chromatographic separation of spiked soy sauce sample No. 47 (A) and vinegar sample No. 48 (B). The spiked concentration of EC corresponds to 150 (blue line), 700 (orange line), and 1300 $\mu\text{g L}^{-1}$ (black line) in both cases.

TABLES

Table S1 Data for calculation of recovery ($n = 5$).

Plum spirit			
Spiked concentration [$\mu\text{g L}^{-1}$]	Average of peak area [mV s]	Average of calculated concentration [$\mu\text{g L}^{-1}$]	Recovery [%]
150	515	137.0	91.3 \pm 4.8
700	1554	589.6	84.2 \pm 2.1
1300	3004	1235.4	95.0 \pm 0.8

Soy sauce			
Spiked concentration [$\mu\text{g L}^{-1}$]	Average of peak area [mV s]	Average of calculated concentration [$\mu\text{g L}^{-1}$]	Recovery [%]
150	495	128.2	90.8 \pm 2.8
700	1861	731.6	103.9 \pm 3.1
1300	3266	1351.1	103.7 \pm 1.9

Vinegar			
Spiked concentration [$\mu\text{g L}^{-1}$]	Average of peak area [mV s]	Average of calculated concentration [$\mu\text{g L}^{-1}$]	Recovery [%]
150	572	162.0	103.2 \pm 3.1
700	1763	687.6	96.5 \pm 2.6
1300	3268	1351.8	103.6 \pm 1.8

Table S2 Data for calculation of intra-day and inter-day repeatability.

Number of measurements	Intra-day repeatability			Inter-day repeatability		
	Retention time [min]	Peak area [mV s]	Concentration [$\mu\text{g L}^{-1}$]	Retention time [min]	Peak area [mV s]	Concentration [$\mu\text{g L}^{-1}$]
1	2.58	3164	1307	2.61	3523	1467
2	2.58	3169	1309	2.59	3227	1335
3	2.58	3283	1360	2.61	3561	1484
4	2.58	3485	1450	2.59	3301	1368
5	2.58	3537	1473	2.58	3827	1603
6	—	—	—	2.58	3536	1473
Average	2.58	3327	1380	2.59	3496	1455
SD	0	175	78	0.01	212.8	95.1
RSD [%]	0.02	5.3	5.7	0.54	6.1	6.5