

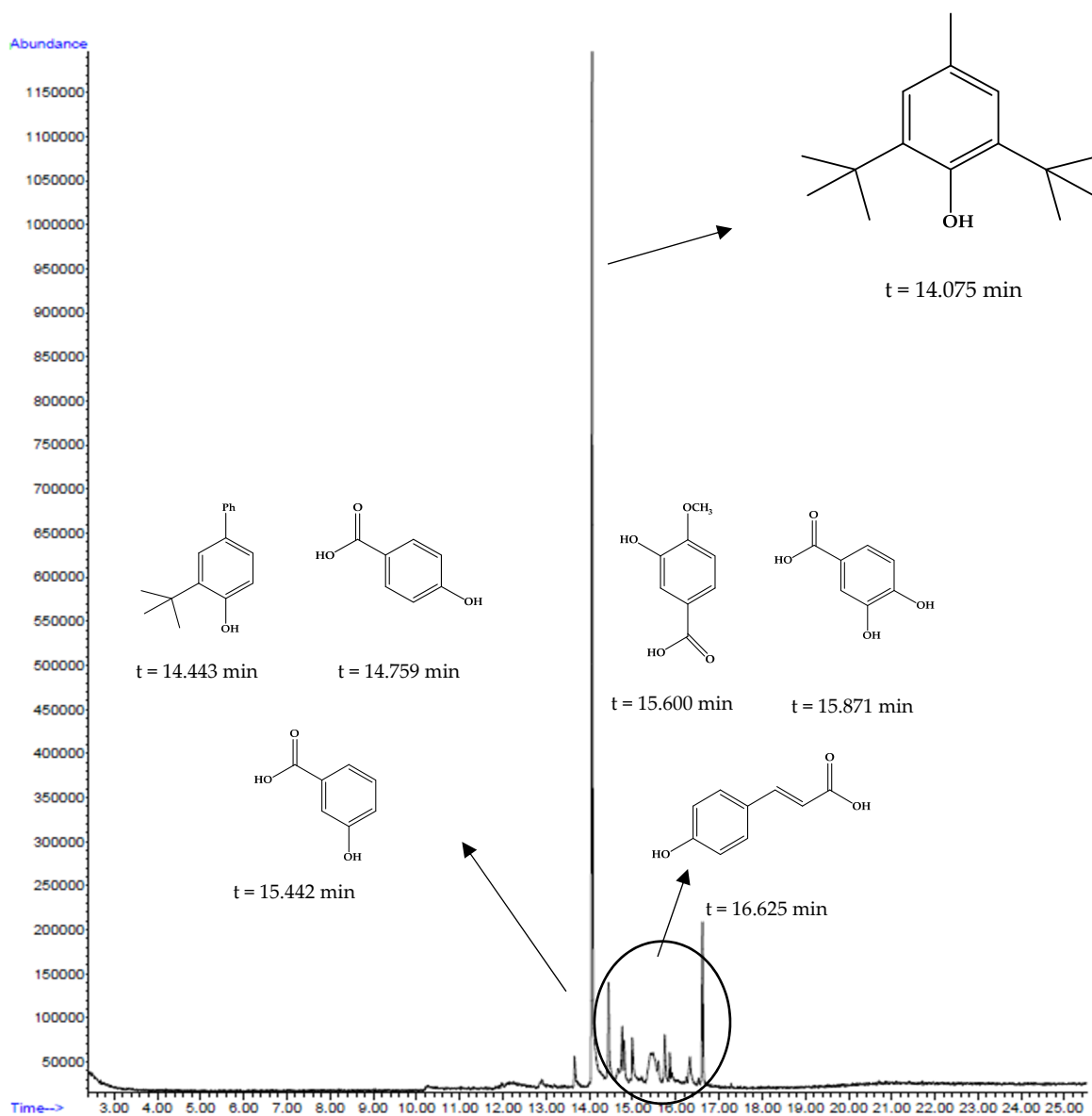
## Supporting Information

**Table S1.** Fiber analysis for grape stalks (GS) according to the National Renewable Energy Laboratory (NREL) procedure [1] and the work of Álvarez (NREL 1) [2] and Genevini (NREL 2) [3].

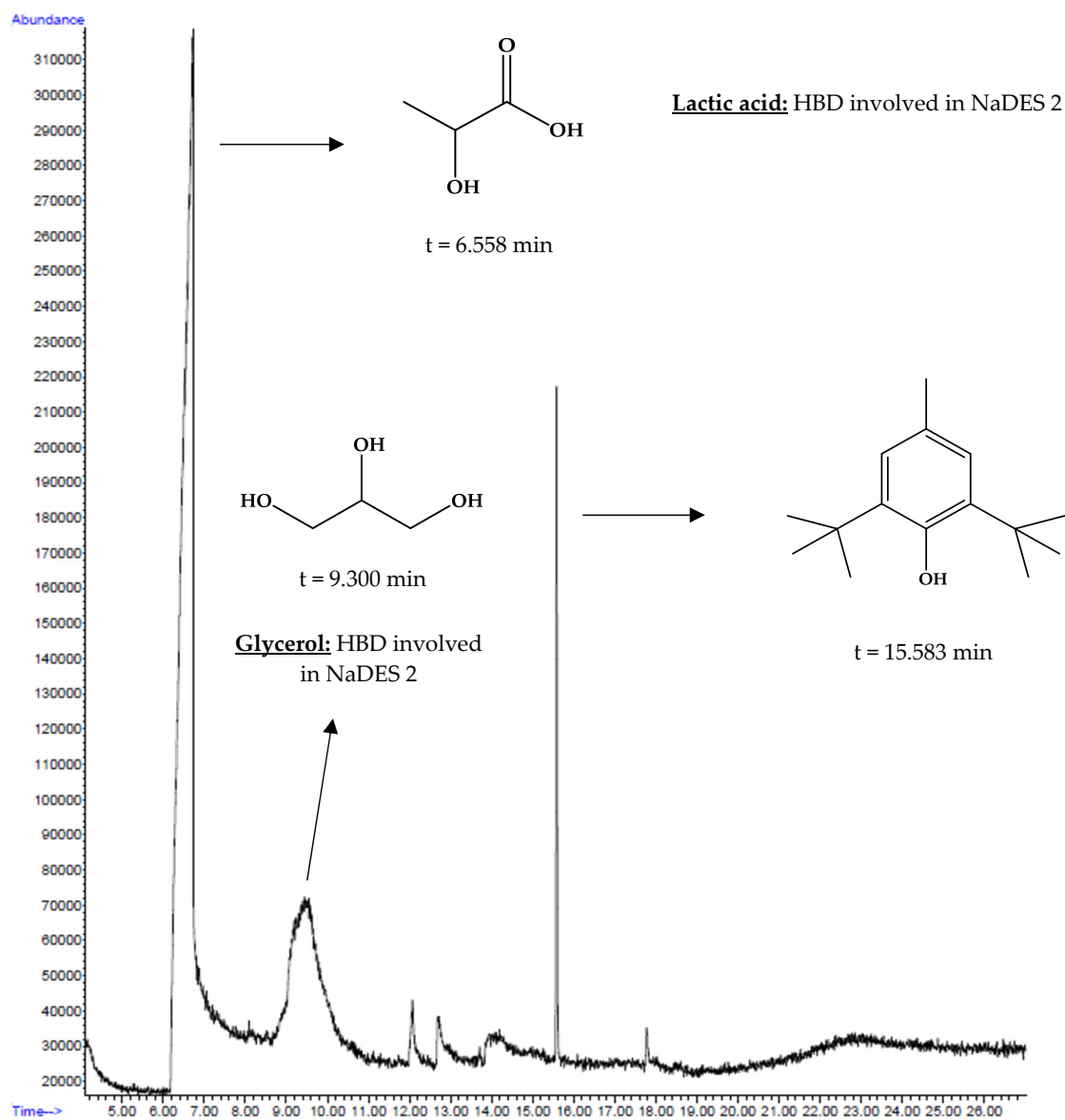
Composition	NREL 1 (wt %) <sup>a</sup>	NREL 2 (wt %) <sup>a</sup>
<b>Extractives</b>	-	8.25 ± 0.35
Non-polar fraction	2.39 ± 0.25	-
Polar fraction	7.22 ± 4.08	-
<b>Fibers</b>	-	-
Holocellulose	34.20 ± 0.13	58.68 ± 0.15
Hemicellulose	18.19 ± 0.45	29.53 ± 2.23
Cellulose	16.38 ± 0.76	29.39 ± 2.11
Proteins	6.46 ± 0.21	-
Lignin	27.77 ± 1.53	32.71 ± 0.54

<sup>a</sup> Percentages refer to initial biomass.

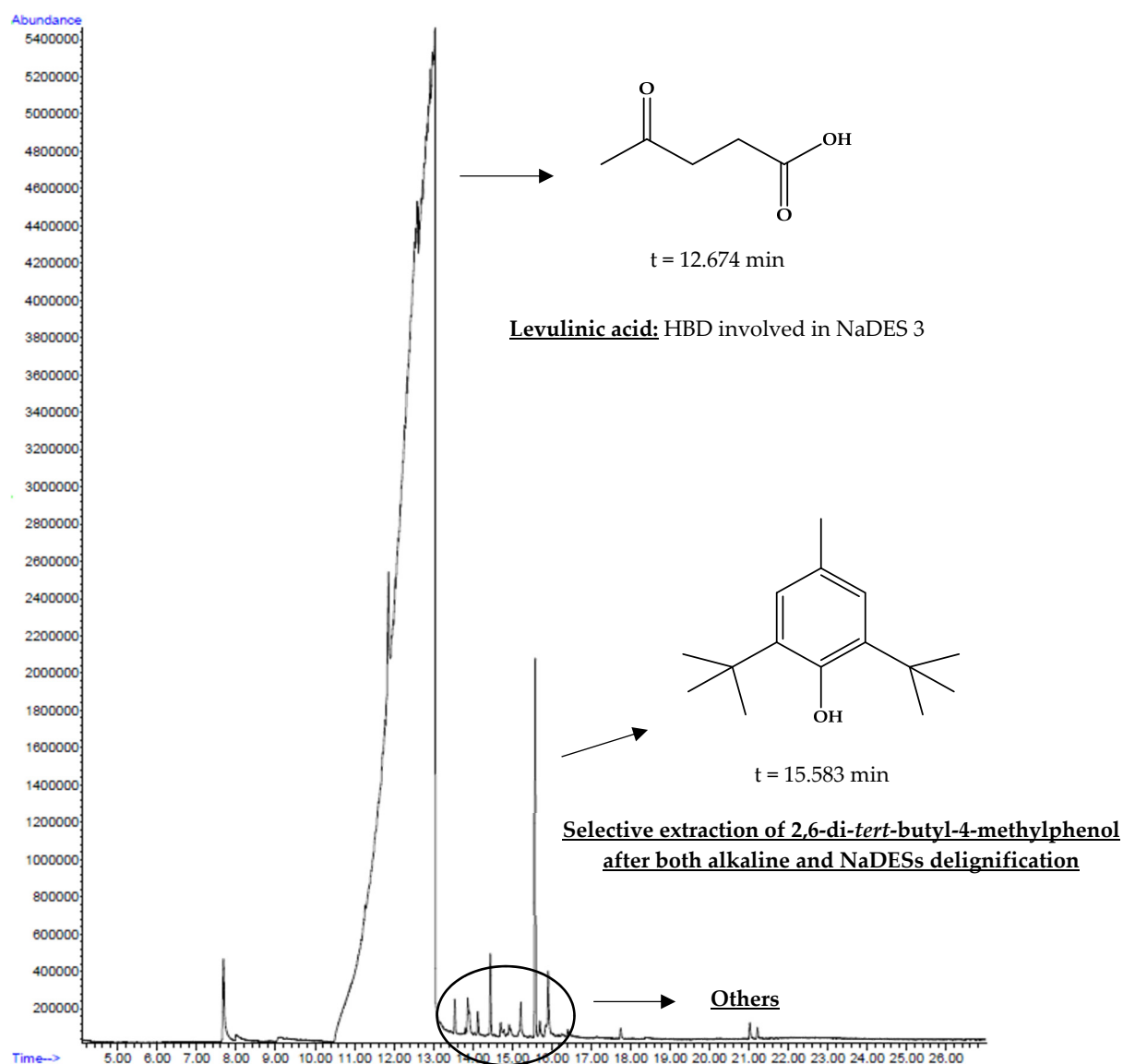
(a)



(b)

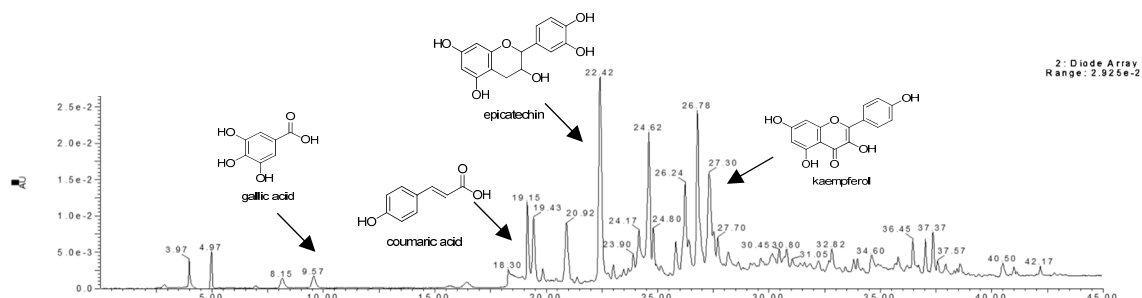


(c)

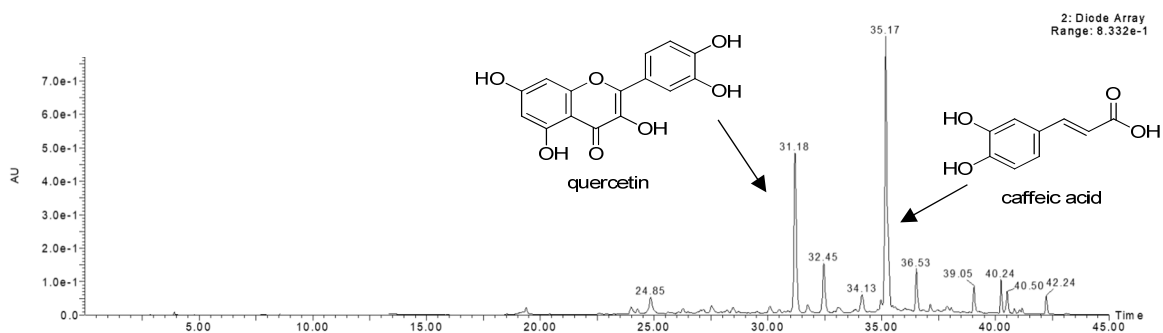


**Figure S1:** GC-MS analyses of the liquid fractions obtained after lignin isolation from GS delignification via UAE (40 kHz, 200 W): alkaline delignification with NaOH at 60 min (a), ChLAGly (b), and ChLevA (c) at 120 min treatment.

(a)

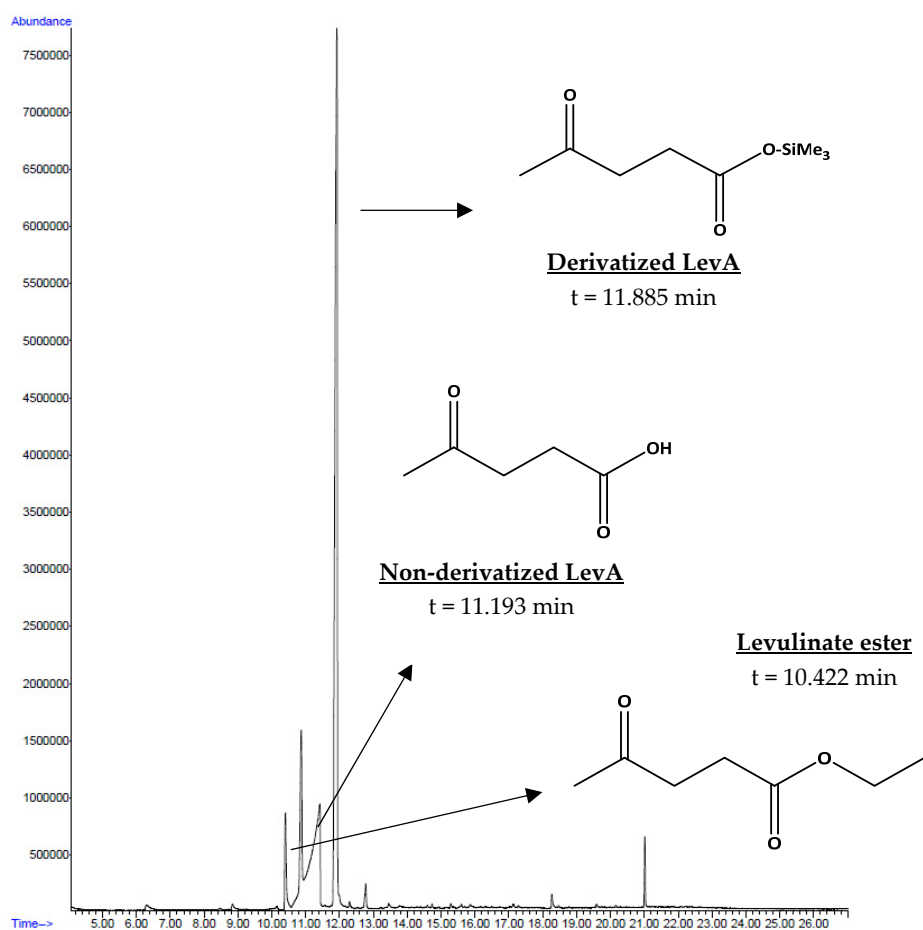


(b)

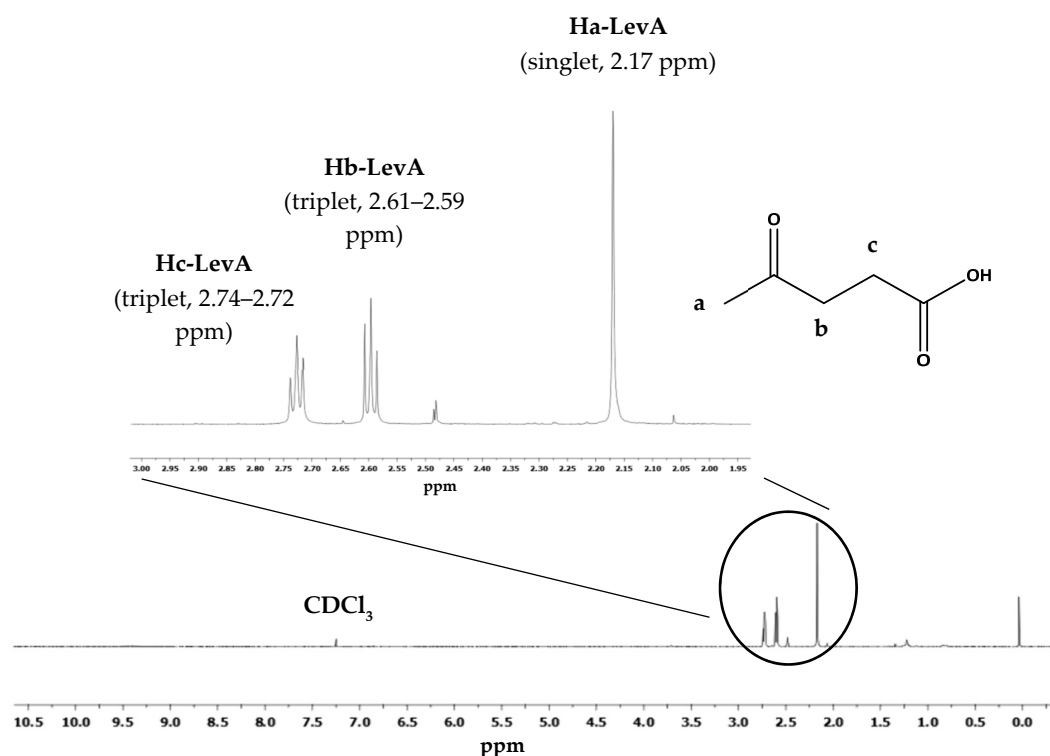


**Figure S2:** HPLC chromatograms of the liquid fraction obtained after lignin isolation from GS delignification via UAE (40 kHz, 200 W): ChLAGly (a) and ChLevA (b) at 120 min treatment.

(a)



(b)



**Figure S3.** GC-MS (a) and NMR (D<sub>2</sub>O, 600 MHz) (b) analyses for the transformation to levulinic acid (LevA) from grape stalks (GS). Reaction conditions detailed in Table 3.

1. Sluiter, A.; Hames, B.; Ruiz, R.; Scarlata, C.; Sluiter, J.; Templeton, D.; Crocker, D. *Determination of Structural Carbohydrates and Lignin In Biomass*; NREL/TP-510-42618; National Renewable Energy Laboratory: Golden, CO, USA, 2008.
2. Álvarez, A.; Cachero, S.; González-Sánchez, C.; Montejo-Bernardo, J.; Pizarro, C.; Bueno, J.L. Novel method for holocellulose analysis of non-woody biomass wastes. *Carbohydr. Polym.* **2018**, *189*, 250–256.
3. Genevini, P.; Adani, F.; Villa, C. Rice hull degradation by co-composting with dairy cattle slurry. *Soil Sci. Plant Nutr.* **1997**, *43*, 135–147.