

Supporting information

Selective production of bio-based aromatics by aerobic oxidation of native soft wood lignin in tetrabutylammonium hydroxide

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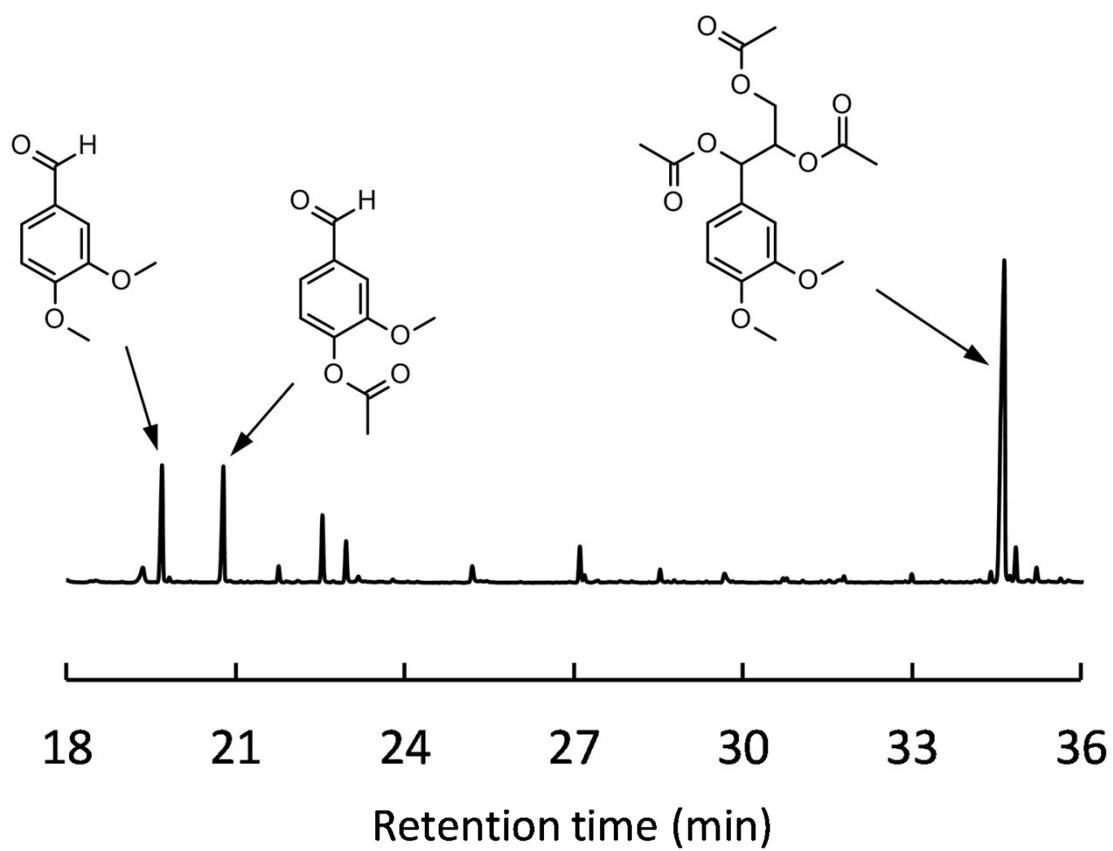


Figure S1. Total ion chromatogram in GC/MS analysis of the acetylated reaction mixture obtained after the degradation of **LM1** in 1.25 mol/L Bu₄NOH for 4 h under air. The identification of the large peak at 34.6 min was made from its molecular ion peak indicating m/z=354.

Values in Figure 1

Figure 1A

Reaction time (h)	Vanillin (wt%)	Vanillic acid (wt%)	Total (wt%)
0	0	0	0
1	9.7	2.4	12.1
2	16.3	2.8	19.1
4	17.6	3.0	20.6
8	19.8	1.8	21.6
20	17.0	0.6	17.5

Figure 1B

Reaction time (h)	Vanillin (wt%)	Vanillic acid (wt%)	Total (wt%)
0	0	0	0
1.5	18.3	2.9	21.2
2.5	20.0	1.3	21.4
4	23.0	1.2	24.2
6	21.1	0.82	22.0
7.25	19.3	1.1	20.4
20	16.2	0.33	16.6

Figure 1C

Reaction time (h)	Vanillin (wt%)	Vanillic acid (wt%)	Total (wt%)
0	0	0	0
10	7.8	2.0	9.8
18	11.6	2.9	14.5
43	15.3	3.	18.8
70	14.1	3.7	17.9

Values in Figure 3

Figure 3A

Reaction time (h)	0	1	4	6	16	24	43
Veratrylalcohol (mol%)	0	0.9	2.2	3.5	7.0	8.5	9.1
Vanillin (mol%)	0	0.5	2.5	4.5	10.5	14.0	15.7
Veratric acid (mol%)	0	1.1	2.5	3.0	6.1	6.7	6.7
Veratraldehyde (mol%)	0	4.7	7.4	6.5	6.8	3.8	2.2
Total A Ring (mol%)	0	7.2	14.6	17.5	30.4	33.0	33.7
Guaiacol (mol%)	0	12.3	31.0	43.0	45.9	47.6	48.4
Recovery of LM1 (%)	100	86.4	56.7	40.2	15.4	8.2	3.7

Figure 3B

Reaction time (h)	0	1	6	24	43
Veratrylalcohol (mol%)	0	0.3	2.2	2.9	3.9
Vanillin (mol%)	0	0.1	0.8	0.59	0.4
Veratric acid (mol%)	0	0.4	3.0	4.6	5.4
Veratraldehyde (mol%)	0	1.9	6.0	5.7	5.2
Total A Ring (mol%)	0	2.7	12.0	13.8	14.8
Guaiacol (mol%)	0	2.3	1.8	0.1	0.16
Recovery of LM1 (%)	100	89.5	74.8	66.6	57.1

Values in Figure 5

Figure 5A

Reaction time (h)	0	0.25	0.5	1	2	4
Recovery of LM2 (%)	100	69.5	56.4	21.2	10.6	1
Enol ethers (mol%)	0	13.5	26.1	34.1	34.7	20.6
Vanillin (mol%)	0	9.2	23.5	40.8	45.4	59.5
Vanillic acid (mol%)	0	0.0	4.1	6.4	9.1	12.7
Guaiacol (mol%)	0	10.1	21.9	39.5	48.4	61.9

Figure 5B

Reaction time (h)	0	0.25	0.5	1	2	4
Recovery of LM2 (%)	100	88.2	78.7	50.3	35	7.4
Enol ethers (mol%)	0	6.4	13.8	30.4	17.9	6
Vanillin (mol%)	0	5.4	11.9	23.3	38.7	83.8
Vanillic acid (mol%)	0	0	0.4	1.4	1.6	5.9
Guaiacol (mol%)	0	5.4	13.1	22.1	39.2	65.5