

Supporting Information

Lignin Functionalization Through Chemical Demethylation: Preparation and Tannin-like Properties of Demethylated Guaiacyl-type Synthetic Lignins

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List of Supporting Materials

- Figure S1.** HSQC NMR spectra of GDHP and deMeGDHP-DSHs.
- Figure S2.** HSQC NMR spectra of GDHP and deMeGDHP-HIs.
- Figure S3.** HSQC NMR spectra of GDHP and deMeGDHP-ICHs.
- Figure S4.** FT-IR spectra of epoxy-GDHPs and epoxy-deMeGDHP-ICHs.

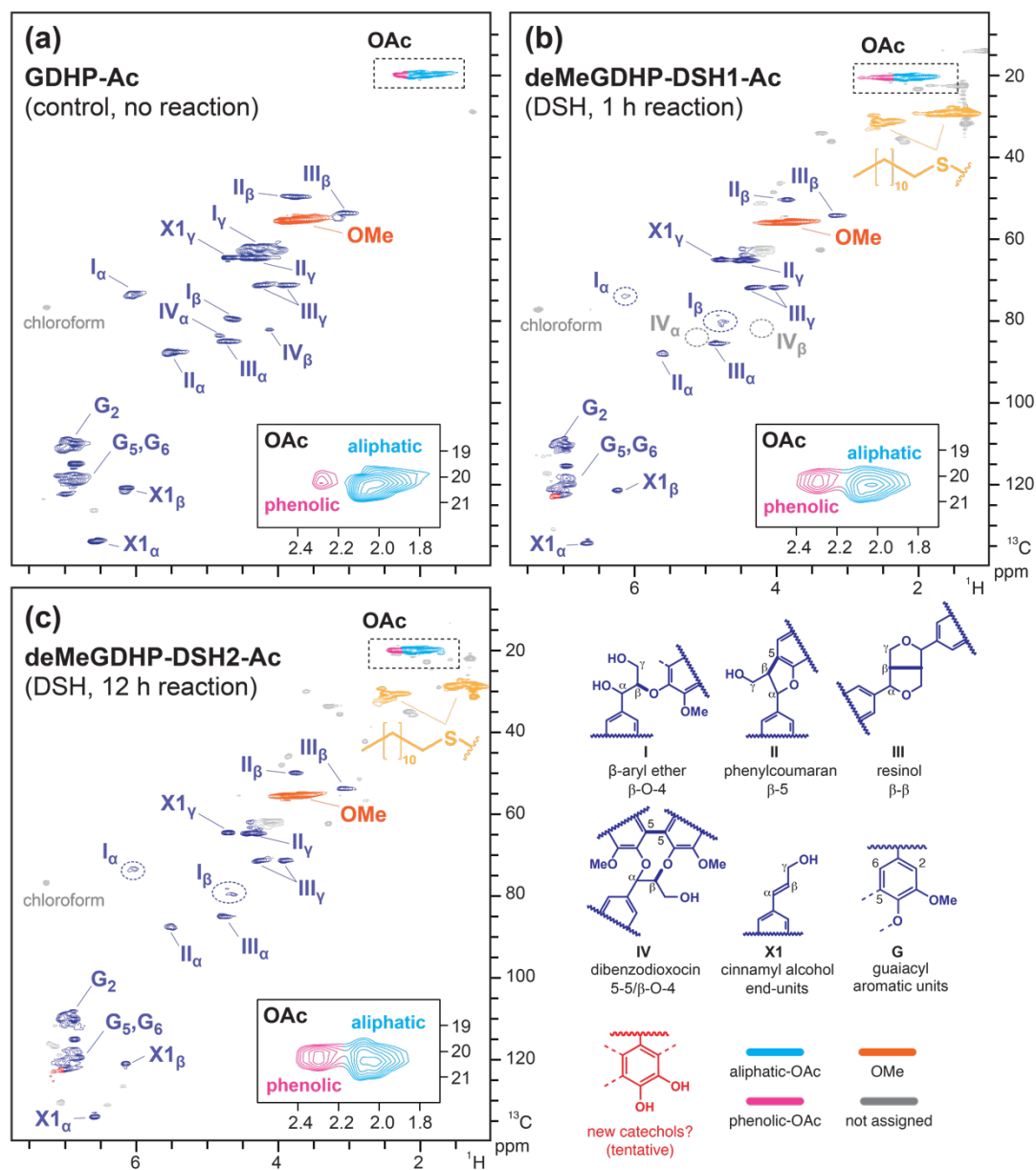


Figure S1. Short range ^1H – ^{13}C correlation (HSQC) NMR spectra of acetylated samples of guaiacyl synthetic lignin (GDHP-Ac, **a**) and demethylated GDHPs prepared with 1-dodecanthiol, DSH with 1h (deMeGDHP-DSH1-Ac, **b**) and 12h (deMeGDHP-DSH2-Ac, **c**) reaction times.

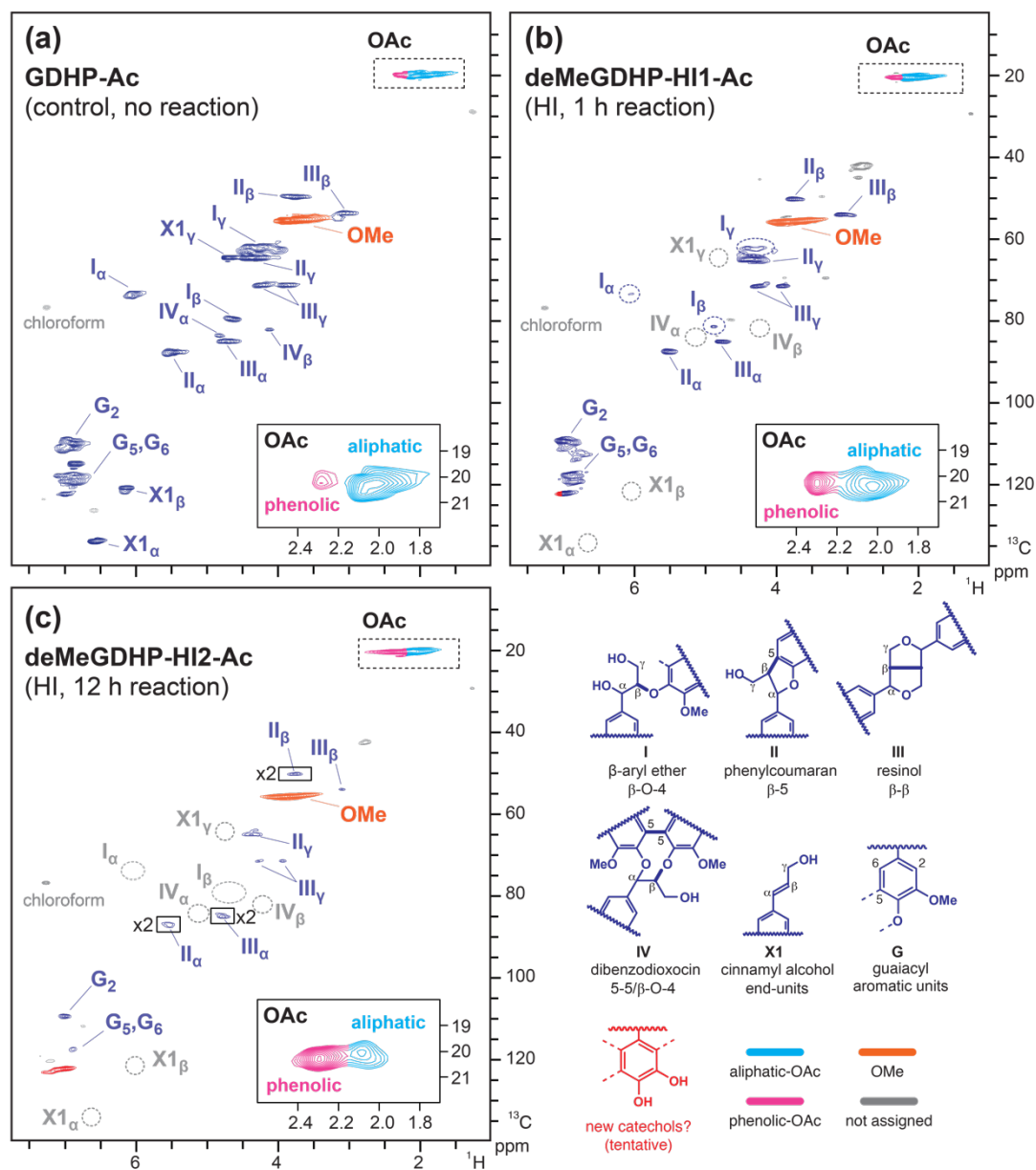


Figure S2. Short range ^1H - ^{13}C correlation (HSQC) NMR spectra of acetylated samples of guaiacyl synthetic lignin (GDHP-Ac, **a**) and demethylated GDHPs prepared with hydroiodic acid, HI with 1h (deMeGDHP-HI1-Ac, **b**) and 12h (deMeGDHP-HI2-Ac, **c**) reaction times.

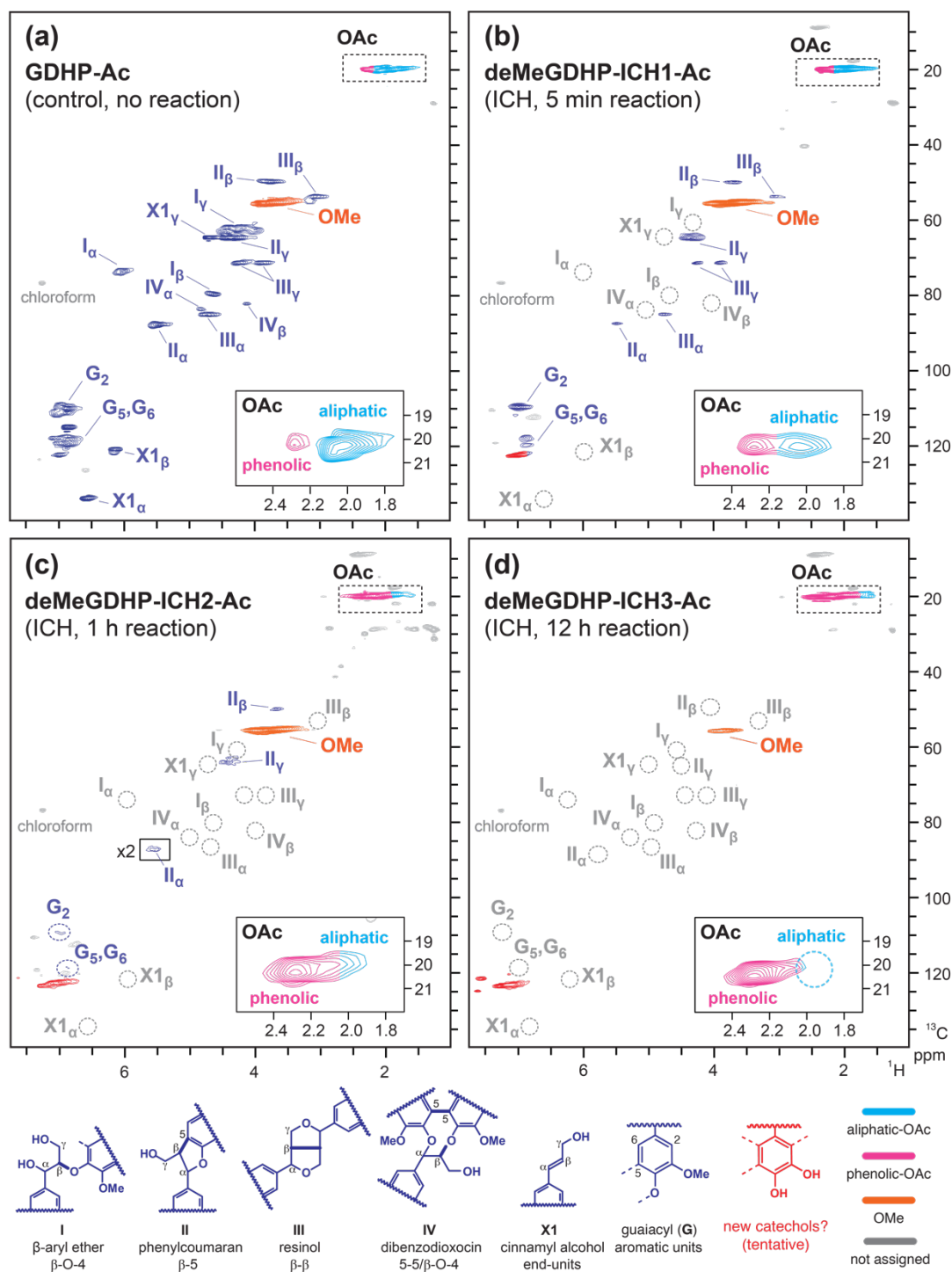


Figure S3. Short range ^1H - ^{13}C correlation (HSQC) NMR spectra of acetylated samples of guaiacyl synthetic lignin (GDHP-Ac, **a**) and demethylated GDHPs prepared with iodocyclohexane, ICH with 5 min (deMeGDHP-ICH1-Ac, **b**), 1h (deMeGDHP-ICH2-Ac, **c**), and 12h (deMeGDHP-ICH3-Ac, **d**) reaction times.

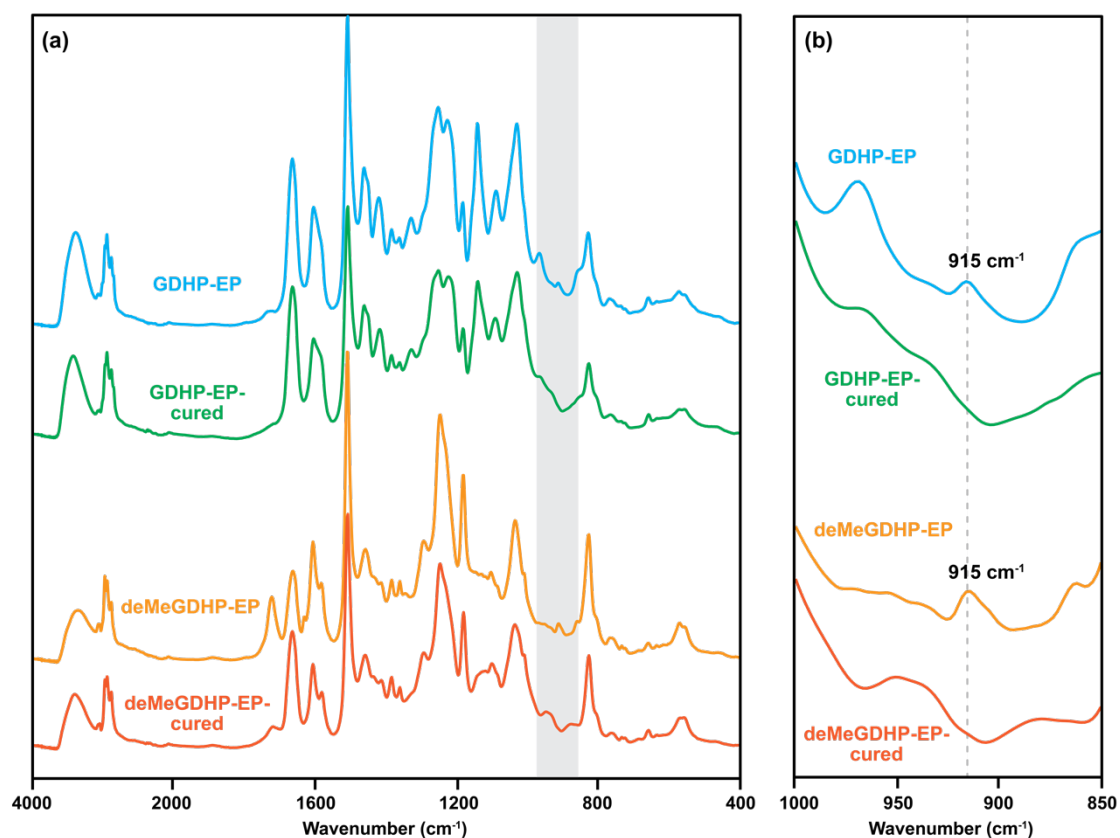


Figure S4. FT-IR spectra of non-cured and cured epoxy resins from guaiacyl synthetic lignin (GDHP-EP and GDHP-EP-cured) and demethylated GDHPs prepared with iodocyclohexane with 12h reaction time (deMeGDHP-ICH3-EP and deMeGDHP-ICH3-EP-cured). **(a)** Full scanned regions. **(b)** Expanded regions showing epoxy vibrations at 915 cm^{-1} .