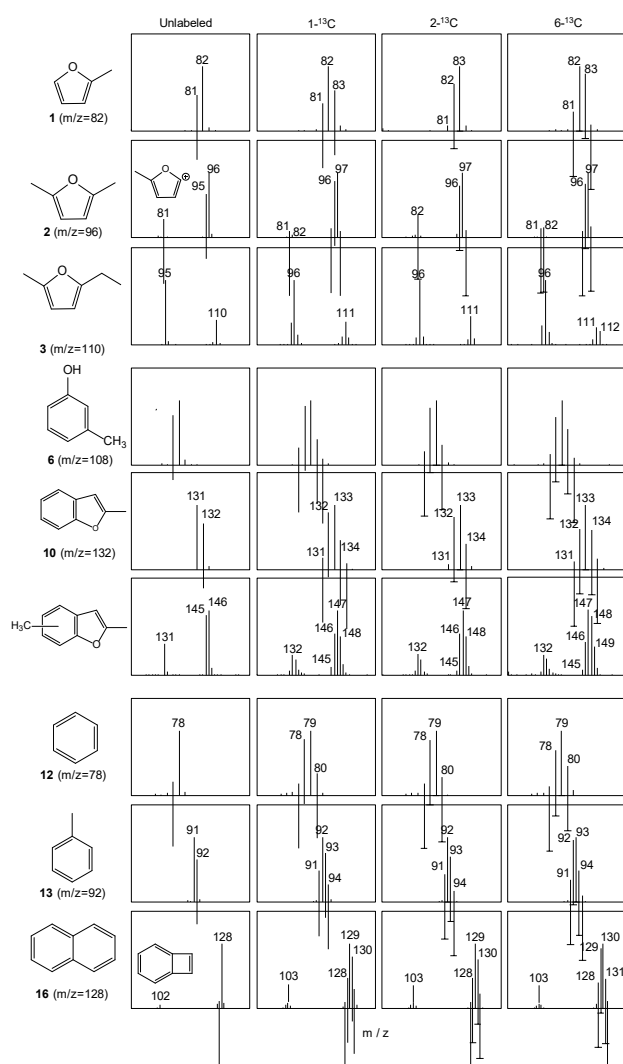
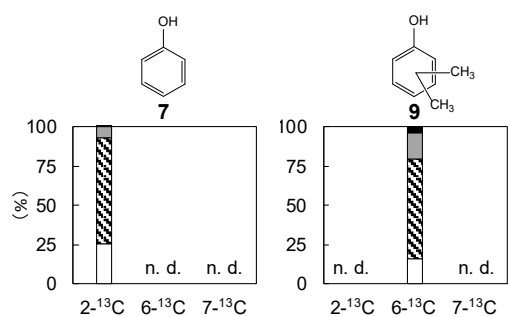


**Figure S1.** Pyrogram obtained from the Py-GC/MS analysis (764 °C, 5 s hold time) of glucose char generated by carbonization at 280 °C for 60 min.



**Figure S2.** Mass spectra of volatile fragments generated by Py-GC/MS analysis (764 °C, 5 s hold time) of unlabeled and labeled glucose chars obtained by carbonization at 280 °C for 60 min.



**Figure S2.** Proportions of phenol-type fragments generated by Py-GC/MS analysis (764 °C, 5 s hold time) of the char fractions prepared from  $^{13}\text{C}$ -labeled 5-HMF samples (280 °C, 60 min) containing  $^{13}\text{C}$  atoms at various sites and in various quantities.