

Supplementary Materials

SIGPVADLTISNGAVSPDGFSRQAILVNDVFPSPPLITGNKGDRFQLNVIDNMTNHTMLKS	60
TSIHWHGFFQHGNTWADGPAFVNQCPISTGHAFLYDFQVPDQAGTFWYHSHLSTQYCDGL	120
RGPIVVYDPQDPHKSLYDVDDDSTVITLADWYHLAAKVGPAPPTADATLINGLGRSINTL	180
NADLAVITVTKGKRYRFRVLVSLSCDPNYTFSIDGHSLTVIEADGVNLKPQTVDSIQIFPA	240
QRYSFVLNADQDQVDNYWIRALPNSGTRNFDGGVNSAILRYEGAAPVEPTTTQTPSTQPLV	300
ESALTTLEGTAAPGNPTPGGVDLALNMAFGFAGGRFTINGASFTPPTVPVLLQILSGAQS	360
AQDLLPSGSVYSLPANADIEISLPATSAAPGFPHPFHLHGHTFAVVRSAQSSTYNYANPV	420
YRDVNTGSPGDNVTIRFRTDNPGPWFLHCHIDFHLDAGFAVMAEDTPDTKAANPVPQA	480
<u>WSDLCPYDALDPSDL</u>	496

Figure S1. Amino acid sequence of chimeric 3A4 laccase used as parent type in this work. Sequence inherited from PcL evolved variant during chimeragenesis is underlined (residues 457–496), while the rest corresponds to PM1-L evolved variant. Copper coordinating residues are highlighted in cyan. Mutated residues located at the substrate binding pocket are shown in magenta.

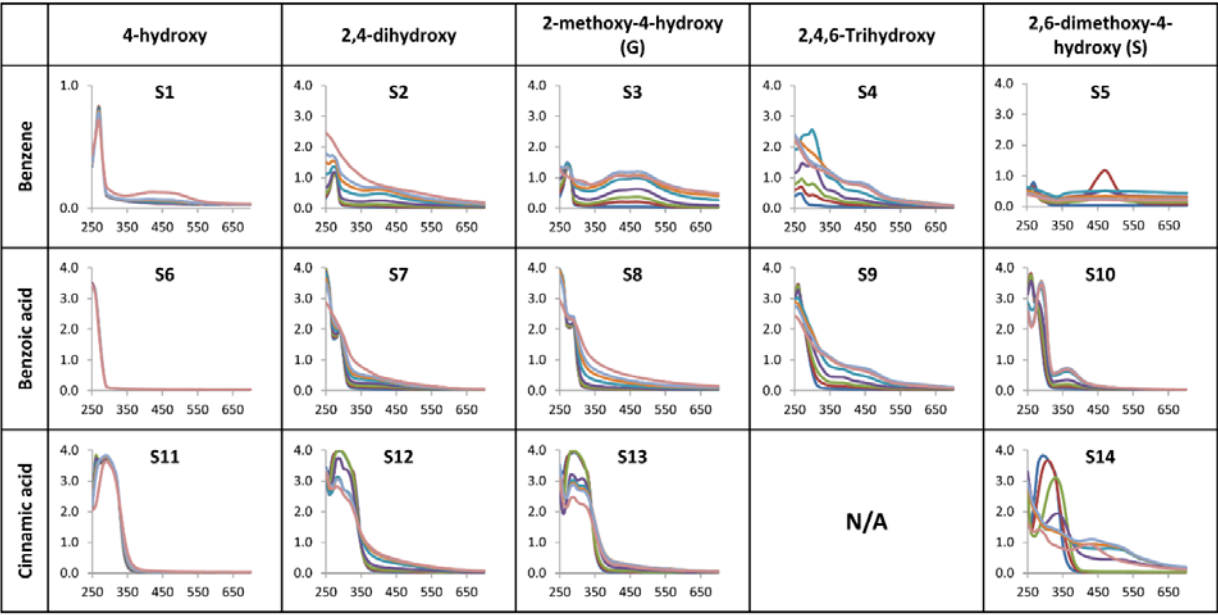


Figure S2. *Cont.*

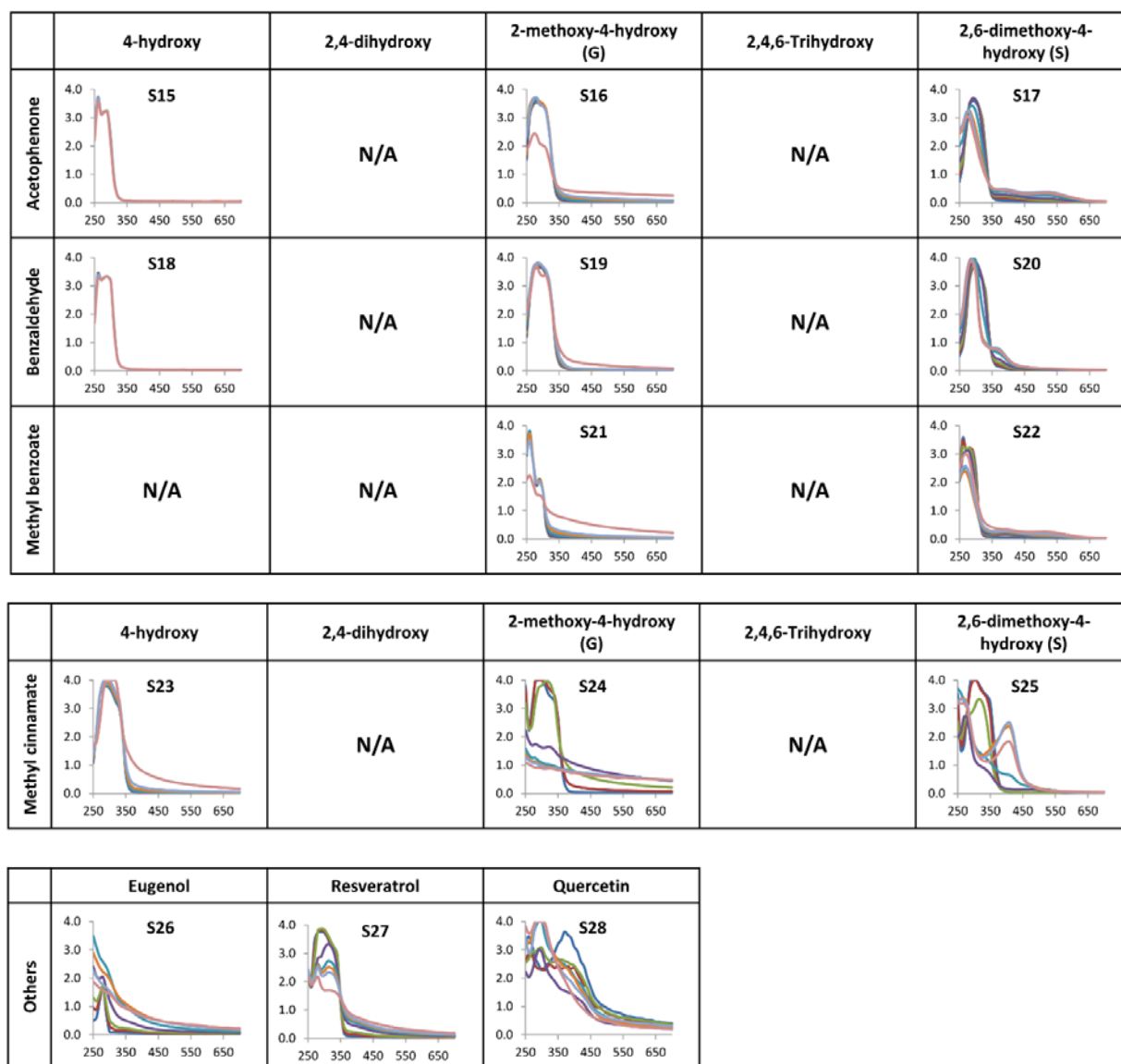


Figure S2. Changes in UV-Vis absorption spectra of the different phenols upon oxidation by laccase. Spectra shown correspond to initial time (**blue**), 30 min (**red**), 1 h (**green**), 2 h (**purple**), 4 h (**cyan**), 6 h (**orange**), 8 h (**light blue**) and 24 h (**pink**).