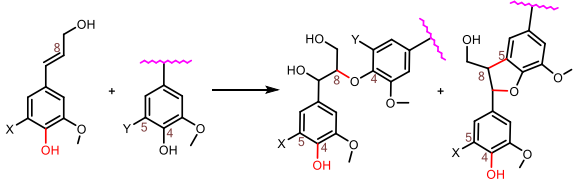
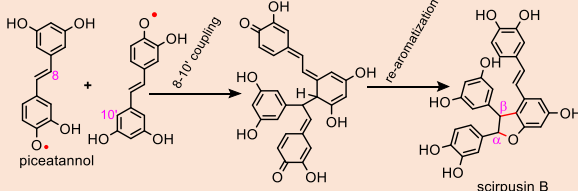
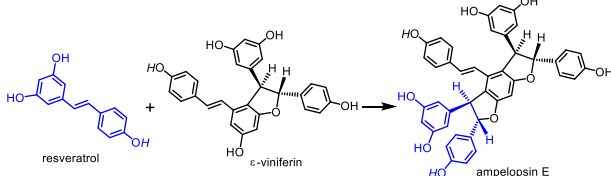
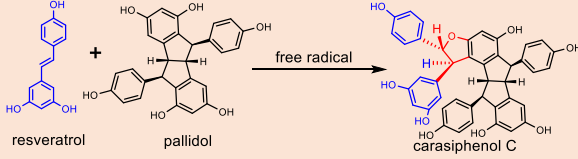
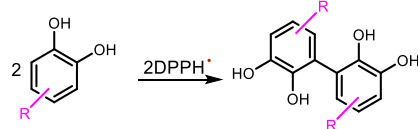


Entry	Typical reaction equation	Explanations or prediction	Field
Eq. 1 ^[1]		<p>The exocyclic C=C involved PRC reaction also occurs in enzymatic lignification.^{[2],[3]} Adhering to the second precondition, subunits in lignin bear <i>para</i>-OH groups. However, these subunits include caffeoyl, <i>para</i>-coumaroyl, feruloyl, and sinapyl.^{[4],[5],[6],[7]} Occasionally, the <i>para</i>-OH group may also be expanded via conjugation or substitution. Eq. 1 is a typical instance. By comparison, there is neither <i>meta</i>-coumaroyl nor isoferuloyl because of the presence of a <i>meta</i>-OH group and the absence of <i>para</i>-OH group.^{[8,9],[2,7,10],[11],[3]}</p>	lignin chemistry
Eq. 2 ^[12]		<p>Eq. 2 shows the dimerization piceatannol to form scirpusin B. This is an exocyclic C=C participated PRC. Thus, piceatannol was found to co-exist with its furan-fused dimer, scirpusin B, the same plant as passion fruit seed.^[13] Previous studies have not assigned the configurations of the two chiral atoms.^{[12],[13]} Herein, the configuration of scirpusin B was predicted to be $\alpha R, \beta R$, according to the aforementioned stereochemical characteristics.</p>	
Eq. 3 ^[14]		<p>Eq. 3 describes the cross-dimerization of <i>E</i>-resveratrol monomer and its dimer, <i>trans</i> ϵ-viniferin. Thus, the product ampelopsin E can be considered as a trimer of <i>E</i>-resveratrol. The trimerization process is also controlled by relevant rules.</p>	natural product chemistry
Eq. 4 ^[15]		<p>As mentioned above, the trimerization can be regarded as a PRC reaction between the monomer and dimer. Thus, stilbene trimerization complies with the rules, especially in terms of the stereoselectivity. This resembles the chemical synthesis of stilbene oligomers.^[16]</p>	

Eq. 5 ^[17]	<p>M-desertorin A 7-demethylsiderin P-orlandin</p>	<p>P450-mediated dimerization is a free radical process. According to the <i>meta</i>-excluded and C-C bonding domination rules, 7-demethylsiderin has three possible linkages, i.e., 8,8', 6,8', and 6,6'. Our calculations indicate that these three possible linkages have similar energies (the ΔG values were calculated to be -1450.6955, -1450.6949, and -1450.6990 Hartree, respectively). Hence, any of these linkages are possible. However, the P450 enzyme excludes the 6,6'-linkage.</p>	synthetic chemistry
Eq. 6 ^[18]	<p>enzymatic $\bullet O_2^-$</p>	<p>Cu^+ oxidation can lead to ROS formation. The ROS (such as $\bullet O_2^-$) can induce tyrosine to undergo a PRC reaction. According to the <i>meta</i>-excluded and C-C bonding domination rules, tyrosine can only use the 3-position for cross-linking.</p>	enzyme chemistry
Eq. 7 ^[19]	<p>2,6-lutidine CH₃CN, 0.6V</p> <p>conferyl alcohol (±) hierochin D</p>	<p>Eq. 7 is also an exocyclic C=C participated PRC reaction. However, the reaction is driven by current. Possibly due to the surplus energy, the reactant can overcome the energy barrier to produce a pair of enantiomers. However, no diastereomers are generated. This can also be attributed to the diastereoselectivity mentioned-above.</p>	neurochemistry
Eq. 8 ^[20]	<p>electrode</p>	<p>Under electrochemical conditions, the phenolic core can be oxidized into a radical intermediate and initiate a cross-PRC reaction. In line with the <i>meta</i>-excluded rule, both the 5- and 7-positions were preferential sites for reaction. Our calculations suggest that the ΔG value (-1224.0282 Hartree) of the <i>para</i>-5 linkage was lower than that of the <i>para</i>-7 linkage (-1224.0276 Hartree). Thus, the cross-PRC reaction can be described using Eq. 8.</p>	electrochemistry

Eq. 9^[21]



According to the *ortho*-diOHs co-activated rule, all sites may be linked and thus, the description shown in Eq. 9 is generally acceptable. A similar instance can also be found in the catecholic unit of peptides.^[22]

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