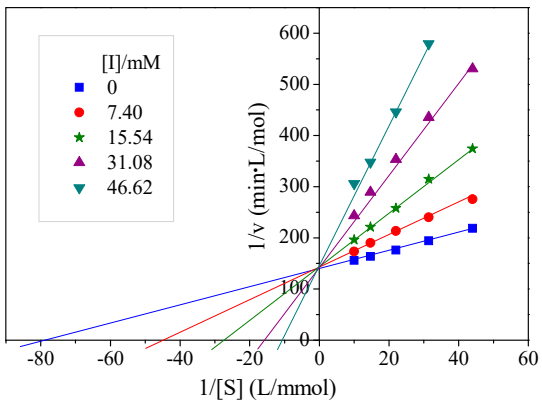
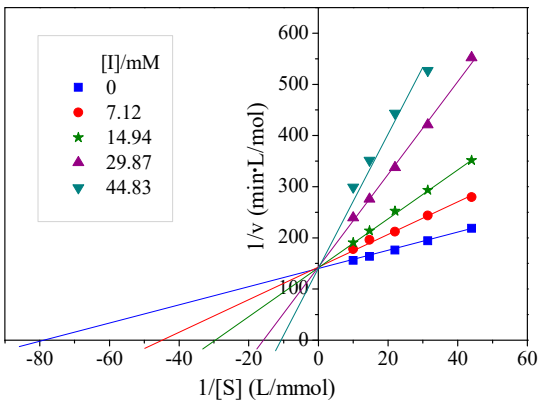
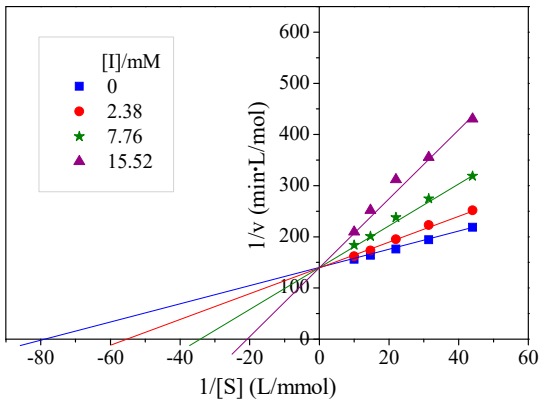
Supplementary List



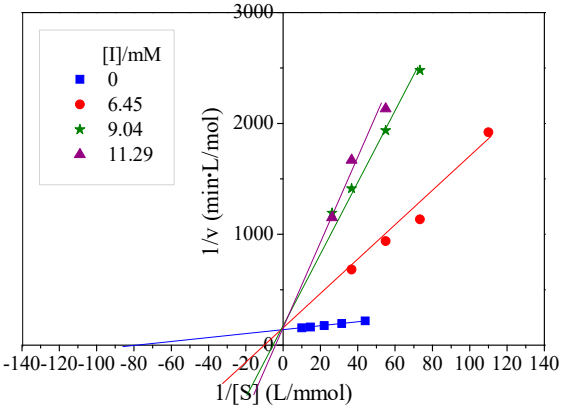
(a) [Bmim]Cl



(b) [Hmim]Cl

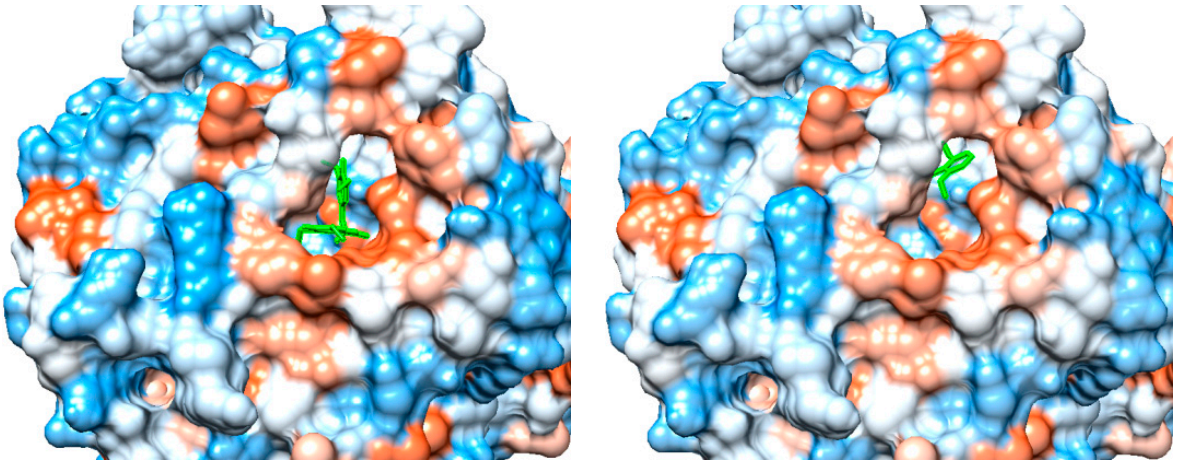


(c) [Omim]C

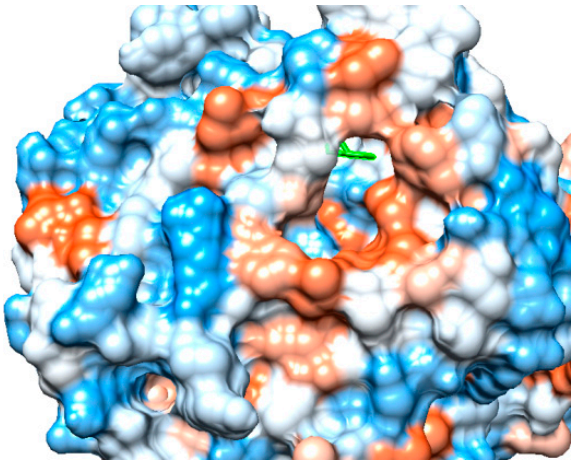


(d) [Dmim]Cl

Figure S1 Lineweaver-Burk plots in presence of other four alkylimidazolium chlorides。



(a) Syringaldazine (b) 2,6-DMP



(c) Guaiacol

Figure S2. Binding of syringaldazine, 2,6-DMP and guaiacol with the T_1 Cu active pocket of *Mth* laccase

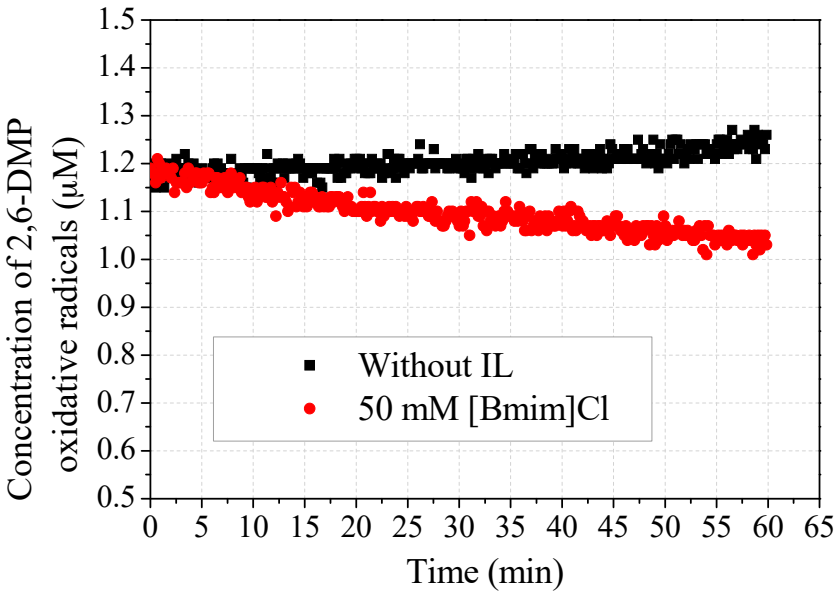


Figure S3. Scavenging of 2,6-DMP oxidative radicals in presence of [Bmim]Cl.

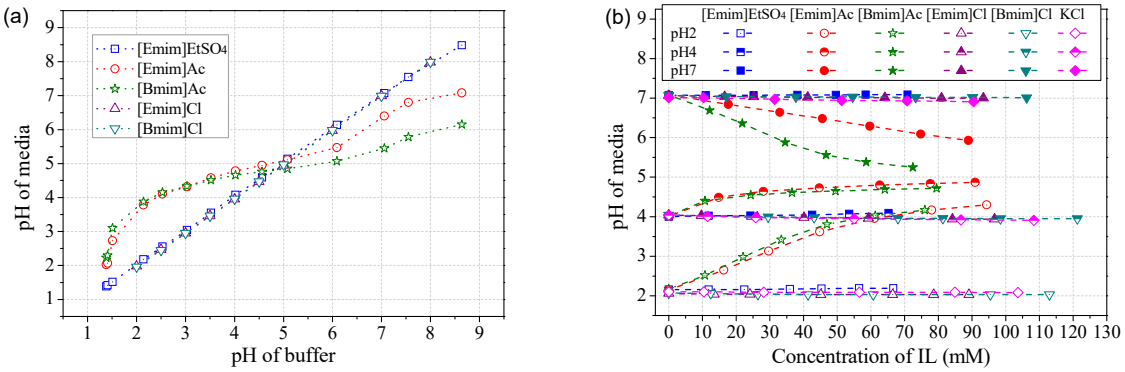


Figure S4. Change of media pH by different alkylimidazolium ILs (Note: Buffer concentration 30 mM).

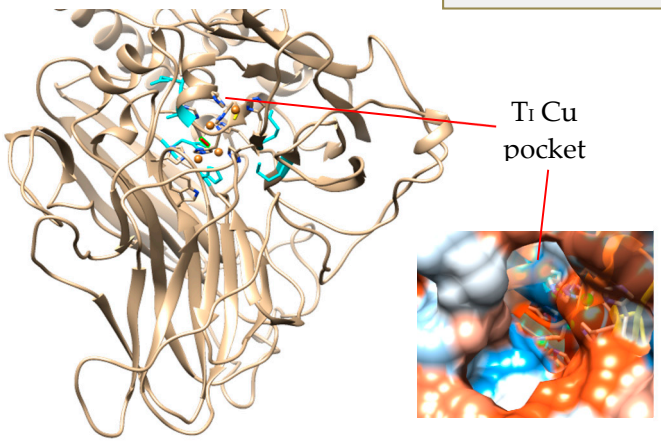
Myceliophthora thermophila
(*Mth*) laccase

QQSCNTPSNRACWTDGYDINTDYEVDSPDTGVVRPYTLTLTEVDNWTGPDGVVKEKVMLVNNSIIGPTIF
ADWGDTIQVTVINNLETNGTSIHWHGLHQKGTNLHDGANGITECPIPPKGGRKVYRFKAQQYGTSWYHSH
FSAQYGNGVVGAIQINGPASLPYDTDLGVFPISDYYYSSADELVELTKNSGAPFSDNVLFNGTAKHPETG
EGEYANVTLTPGRRHRLRLINTSVENHFQVSLVNHTMCIIAADMVPVNAMTVDSLFLGVGQRYDVVIEAN
RTPGNYWFNVTFGGGLLCGGSRNPYPAAIFHYAGAPGGPPTDEGKAPVDHNCLDLPNLKPVVARDVPLSG
FAKRADNTLDVTLDTTGTPLFVWKVNGSAINIDWGRAVVDYVLTQNTSFPPGYNIVEVNGADQWSYWLIE
NDPGAPFTLPHPMHLHGHDFYVLGRSPDESPASNERHVFDPARDAGLLSGANPVRRDVSMLPAFGWVVLS
FRADNPGAWLFHCHIAWHVSGGLGVVYLERADDLRGAVSDADADDLDRLCADWRRYWPTNPYPKSDSGLK
HRWVEEGEWLVKA

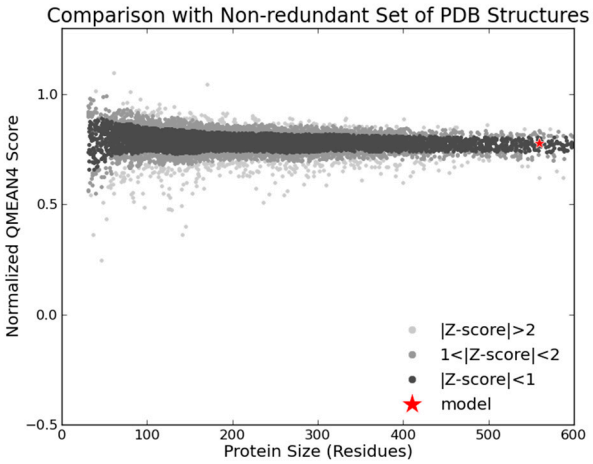
Melanocarpus albomyces
(*Mal*) laccase

EPTCNTPSNRACWSDGFDINTDYEVSTPDTGVTQSYVFNLTEVDNWMGPDGVVKEKVMLINGNIMGPNIV
ANWGDTVEVTVINNLVTNGTSIHWHGIHQKDTNLHDGANGVTECPIPPKGGQRTYRWRARQYGTSWYHSH
FSAQYGNGVVGTIQINGPASLPYDIDLGVFPITDYYYRAADDLVHFTQNNAPPFSDNVLINGTAVNPNTG
EGQYANVTLTPGKRHRLRILNTSTENHFQVSLVNHTMTVIAADMVPVNAMTVDSLFLAVGQRYDVVIDAS
RAPDNYWFNVTFGGQAACGGSLNPHPAAIFHYAGAPGGLPTDEGTPPVDHQCLDTLDVRPVVPRSVPVNS
FVKRPDNTLPVALDLTGTPLFVWKVNGSDINVDWGKPIIDYILTGNTSYPVSDNIVQVDAVDQWTYWLIE
NDPEGPFSLPHPMHLHGHDFLVLGRSPDVPAASQQRFVFDPAVDLARLNGDNPPRRDTTMLPAGGWLLLA
FRTDNPGAWLFHCHIAWHVSGGLSVDFLERPADLRQRISQEDEDDFNRVCDEWRAYWPTNPYPKIDSGL

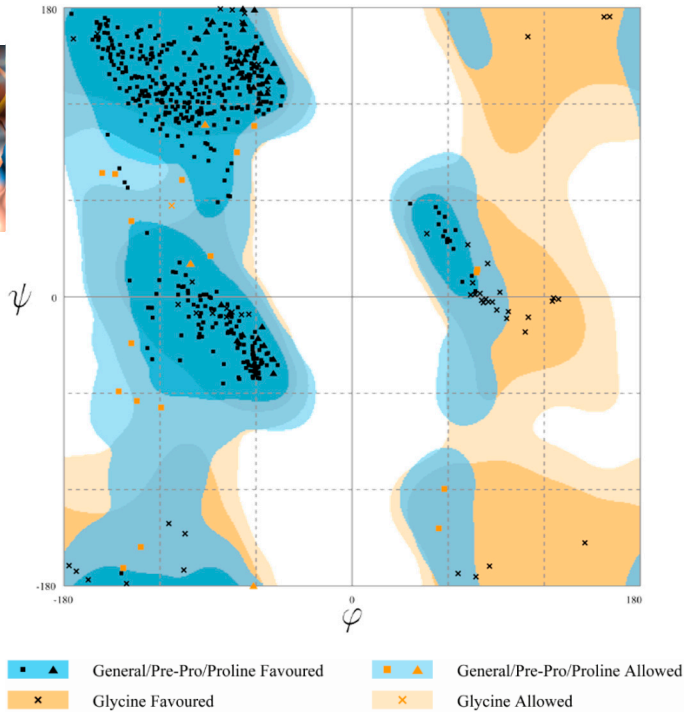
(a) Amino acids sequences



(b) 3D model



(c) QMEAN Z-score



(d) Ramachandran Plot

Figure S5. Homology modeling of *Myceliophthora thermophila* laccase

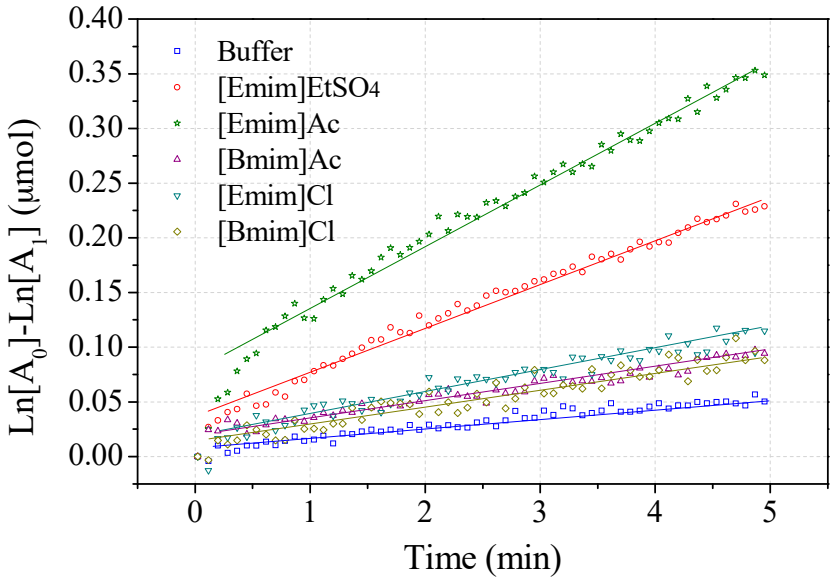


Figure S6. Plots of Ln[A_0]-Ln[A_1] vs. radical scavenging time