## Supplementary Materials: Synthesis and Antifungal Activity of 3-caren-5-one oxime esters



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Figure S1. UV-vis spectrum of 3-caren-5-one (2) in EtOH.



Figure S2. FTIR spectrum of 3-caren-5-one (2).

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Figure S3. 1H-NMR spectrum of 3-caren-5-one (2) in CDCl3.



Figure S4. <sup>13</sup>C-NMR spectrum of 3-caren-5-one (2) in CDCl<sub>3</sub>.







**Figure S6.** UV-vis spectrum of (*Z*)-3-caren-5-one oxime ((*Z*)-**3a**) in EtOH.



**Figure S7.** FTIR spectrum of (*Z*)-3-caren-5-one oxime ((*Z*)-**3a**).



Figure S8. <sup>1</sup>H-NMR spectrum of (*Z*)-3-caren-5-one oxime ((*Z*)-3a) in CDCl<sub>3</sub>.



Figure S10. NOESY spectrum of (*Z*)-3-caren-5-one oxime ((*Z*)-3a) in CDCl<sub>3</sub>.



**Figure S11.** ESI-MS spectrum of (*Z*)-3-caren-5-one oxime ((*Z*)-3a).









Figure S13. FTIR spectrum of (*E*)-3-caren-5-one oxime ((*E*)-3b).



Figure S14. <sup>1</sup>H-NMR spectrum of (*E*)-3-caren-5-one oxime ((*E*)-3b) in CDCl<sub>3</sub>.



Figure S15. <sup>13</sup>C-NMR spectrum of (*E*)-3-caren-5-one oxime ((*E*)-3b) in CDCl<sub>3</sub>



**Figure S16.** NOESY spectrum of (*E*)-3-caren-5-one oxime ((*E*)-**3b**) in CDCl<sub>3</sub>.













**Figure S19.** FTIR spectrum of compound (*Z*)-4a.



Figure S21. <sup>13</sup>C-NMR spectrum of compound (Z)-4a in CDCl<sub>3</sub>.



**Figure S22**. ESI-MS spectrum of compound (*Z*)-4a.

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**Figure S24.** FTIR spectrum of compound (*Z*)-4b.







Figure S26. <sup>13</sup>C-NMR spectrum of compound (Z)-4b in CDCl<sub>3</sub>.







**Figure S28.** UV-vis spectrum of compound (*Z*)-**4c** in EtOH.



**Figure S29.** FTIR spectrum of compound (*Z*)-4c.



**Figure S30**. <sup>1</sup>H-NMR spectrum of compound (*Z*)-**4c** in CDCl<sub>3</sub>.



Figure S31. <sup>13</sup>C-NMR spectrum of compound (*Z*)-4c in CDCl<sub>3</sub>.







**Figure S33.** UV-vis spectrum of compound (*Z*)-4d in EtOH.



**Figure S34.** FTIR spectrum of compound (*Z*)-4d.



Figure S35. <sup>1</sup>H-NMR spectrum of compound (Z)-4d in CDCl<sub>3</sub>.



Figure S36. <sup>13</sup>C-NMR spectrum of compound (Z)-4d in CDCl<sub>3</sub>.







**Figure S38.** UV-vis spectrum of compound (*Z*)-**4e** in EtOH.



**Figure S39.** FTIR spectrum of compound (*Z*)-4e.



Figure S41. <sup>13</sup>C-NMR spectrum of compound (Z)-4e in CDCl<sub>3</sub>.



Figure S42. ESI-MS spectrum of compound (Z)-4e.

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Figure S44. FTIR spectrum of compound (*Z*)-4f.



Figure S45. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4f in CDCl<sub>3</sub>.



Figure S46. <sup>13</sup>C-NMR spectrum of compound (*Z*)-4f in CDCl<sub>3</sub>.







Figure S48 UV-vis spectrum of compound (*Z*)-4g in EtOH.







Figure S50. <sup>1</sup>H-NMR spectrum of compound (Z)-4g in CDCl<sub>3</sub>

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Figure S51. <sup>13</sup>C-NMR spectrum of compound (*Z*)-4g in CDCl<sub>3</sub>.







**Figure S53.** UV-vis spectrum of compound (*Z*)-**4h** in EtOH.



**Figure S54.** FTIR spectrum of compound (*Z*)-4h.



Figure S55. <sup>1</sup>H-NMR spectrum of compound (Z)-4h in CDCl<sub>3</sub>.



Figure S56. <sup>13</sup>C-NMR spectrum of compound (Z)-4h in CDCl<sub>3</sub>.







Figure S58. UV-vis spectrum of compound (*Z*)-4i in EtOH.



Figure S59. FTIR spectrum of compound (*Z*)-4i.



Figure S60. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4i in CDCl<sub>3</sub>.



Figure S61. <sup>13</sup>C-NMR spectrum of compound (*Z*)-4i in CDCl<sub>3</sub>.







**Figure S63.** UV-vis spectrum of compound (*Z*)-**4j** in EtOH.



**Figure S64.** FTIR spectrum of compound (*Z*)-4j.



Figure S65. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4j in CDCl<sub>3</sub>.







Figure S67. ESI-MS spectrum of compound (Z)-4j





Figure S68 UV-vis spectrum of compound (*Z*)-4k in EtOH.



**Figure S69.** FTIR spectrum of compound (*Z*)-4k.



Figure S70. <sup>1</sup>H-NMR spectrum of compound (Z)-4k in CDCl<sub>3</sub>.



Figure S71. <sup>13</sup>C-NMR spectrum of compound (Z)-4k in CDCl<sub>3</sub>.











Figure S74. FTIR spectrum of compound (Z)-41.



Figure S75. <sup>1</sup>H-NMR spectrum of compound (Z)-4l in CDCl<sub>3</sub>.



Figure S76. <sup>13</sup>C-NMR spectrum of compound(Z)-41 in CDCl<sub>3</sub>.









**Figure S78.** UV-vis spectrum of compound (*Z*)-**4m** in EtOH.



**Figure S79.** FTIR spectrum of compound (*Z*)-4m.



Figure S81. <sup>13</sup>C-NMR spectrum of compound (*Z*)-4m in CDCl<sub>3</sub>.



Figure S82. ESI-MS spectrum of compound (Z)-4m.

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**Figure S84.** FTIR spectrum of compound (*Z*)-4n.



Figure S85. <sup>1</sup>H-NMR spectrum of compound (Z)-4n in CDCl<sub>3</sub>.









**Figure S88.** UV-vis spectrum of compound (*Z*)-**40** in EtOH.



**Figure S89.** FTIR spectrum of compound (*Z*)-40.



Figure S90. <sup>1</sup>H-NMR spectrum of compound (Z)-40 in CDCl<sub>3</sub>.



Figure S91. <sup>13</sup>C-NMR spectrum of compound (*Z*)-40 in CDCl<sub>3</sub>.









**Figure S93.** UV-vis spectrum of compound (*Z*)-**4p** in EtOH.



**Figure S94.** FTIR spectrum of compound (*Z*)-4**p**.



Figure S97. ESI-MS spectrum of compound (*Z*)-4p.





**Figure S98.** UV-vis spectrum of compound (*Z*)-4q in EtOH.



**Figure S99.** FTIR spectrum of compound (*Z*)-4q.



**Figure S100**. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4q in CDCl<sub>3</sub>.



Figure S101. <sup>13</sup>C-NMR spectrum of compound (Z)-4q in CDCl<sub>3</sub>.







Figure S103. UV-vis spectrum of compound (*Z*)-4r in EtOH.



**Figure S104.** FTIR spectrum of compound (*Z*)-**4r**.



Figure S105. <sup>1</sup>H-NMR spectrum of compound (Z)-4r in CDCl<sub>3</sub>.



Figure S106. <sup>13</sup>C-NMR spectrum of compound (*Z*)-4r in CDCl<sub>3</sub>.









**Figure S108.** UV-vis spectrum of compound (*Z*)-**4s** in EtOH.



**Figure S109.** FTIR spectrum of compound (*Z*)-4s.



Figure S110. 1H-NMR spectrum of compound 4s in CDCl3.

















**Figure S114.** FTIR spectrum of compound (*Z*)-4t.



Figure S115. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4) in CDCl<sub>3</sub>.



Figure S116. <sup>13</sup>C-NMR spectrum of compound (Z)-4t in CDCl<sub>3</sub>.







Figure S118. UV-vis spectrum of compound (*Z*)-4u in EtOH.



**Figure S119.** FTIR spectrum of compound (*Z*)-4u.



**Figure S120**. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4**u** in CDCl<sub>3</sub>.



**Figure S121**. <sup>13</sup>C-NMR spectrum of compound (*Z*)-4**u** in CDCl<sub>3</sub>.









**Figure S123.** UV-vis spectrum of compound (*Z*)-**4v** in EtOH.



**Figure S124.** FTIR spectrum of compound (*Z*)-**4**v.



Figure S125. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4v in CDCl<sub>3</sub>.







Figure S127. ESI-MS spectrum of compound (*Z*)-4v.

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Figure S128. UV-vis spectrum of compound (*Z*)-4w in EtOH.



**Figure S129.** FTIR spectrum of compound (*Z*)-4w.



Figure S130. <sup>1</sup>H-NMR spectrum of compound (*Z*)-4w in CDCl<sub>3</sub>.



Figure S131. <sup>13</sup>C-NMR spectrum of compound (Z)-4w in CDCl<sub>3</sub>.















Figure S135. <sup>1</sup>H-NMR spectrum of compound (*E*)-4f' in CDCl<sub>3</sub>.



Figure S136. <sup>13</sup>C-NMR spectrum of compound (E)-4f' in CDCl<sub>3</sub>.







Figure S138. UV-vis spectrum of compound (E)-41'.



Figure S139. FTIR spectrum of compound (*E*)-4l'.



**Figure S140**. <sup>1</sup>H-NMR spectrum of compound (*E*)-4l' in CDCl<sub>3</sub>.



Figure S141. <sup>13</sup>C-NMR spectrum of compound (*E*)-4l' in CDCl<sub>3</sub>.





Figure S142. ESI-MS spectrum of compound (E)-4l'.



Figure S143. UV-vis spectrum of compound (*E*)-4r'.



Figure S144. FTIR spectrum of compound (*E*)-4r'.



Figure S145. <sup>1</sup>H-NMR spectrum of compound (*E*)-4r' in CDCl<sub>3</sub>.







