Supplementary Material

BF$_3$OEt$_2$ and MeSO$_3$H-Promoted reactions of phenols and ethyl phenylpropiolate as a synthetic routes to neoflavones and a potential route to flavones

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Typical Procedure for BF$_3$OEt$_2$-promoted reaction of phenols and ethyl phenylpropiolate

A mixture of phenol 1 (0.50 g, 5.3 mmol) with ethyl phenylpropiolate 2 (0.93 g, 5.3 mmol) in the presence of excess BF$_3$OEt$_2$ (3 mL, 24.3 mmol) and DMF (1.88 mL, 24.3 mmol) was refluxed for 3 h. The reaction was quenched with water and extracted with chloroform. The extract was concentrated using rotavapor and adsorbed on silica before been subjected to column chromatography and eluted with n-hexane-ethyl acetate (8: 3).

Typical Procedure for MeSO$_3$H-promoted reaction of phenols and ethyl phenylpropiolate

A mixture of phenol 1 (0.5 g, 5.3 mmol) and ethyl phenylpropiolate 2 (0.93 g, 5.3 mmol) in the presence of excess methanesulfonic acid (3 mL, 46.2 mmol) was stirred at room temperature for 2 h. The reaction was quenched with a saturated aqueous solution of NaHCO$_3$ and extracted with chloroform. The extract was then concentrated using rotavapor and subjected to column chromatography eluting with n-hexane-ethyl acetate (8:3).
$^1$H and $^{13}$C SPECTRA OF THE PREPARED COMPOUNDS

Figure 1. $^1$H NMR (500 MHz, chloroform-d) spectrum of neoflavone 4.

Figure 2. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of neoflavone 4.
Figure 3. $^1$H NMR (500 MHz, chloroform-d) spectrum of flavone 6.

Figure 4. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of flavone 6.
Figure 5. $^1$H NMR (500 MHz, chloroform-d) spectrum of neoflavone 8.

Figure 6. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of Neoflavone 8.
Figure 7. $^1$H NMR (500 MHz, chloroform-d) spectrum of neoflavone 10.

Figure 8. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of flavone 10.
Figure 9. $^1$H NMR (500 MHz, chloroform-d) spectrum of neoflavone 11.

Figure 10. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of flavone 11.
Figure 11. $^1$H NMR (500 MHz, chloroform-d) spectrum of flavone 12.

Figure 12. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of flavone 12.
Figure 13. $^1$H NMR (500 MHz, chloroform-d) spectrum of neoflavone 14.

Figure 14. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of neoflavone 14.
Figure 15. $^1$H NMR (500 MHz, chloroform-d) spectrum of flavone 15.

![Figure 15](image)

Figure 16. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of flavone 15.

![Figure 16](image)
Figure 17. $^1$H NMR (500 MHz, chloroform-d) spectrum of neoflavone 17.

Figure 18. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of neoflavone 17.
Figure 19. $^1$H NMR (500 MHz, chloroform-d) spectrum of flavone 18.

![Flavone 18 H NMR Spectrum](image)

Figure 20. $^{13}$C NMR (125 MHz, chloroform-d) spectrum of flavone 18.

![Flavone 18 C NMR Spectrum](image)