Supporting Information

Synthesis, characterization and biological activities of 3-aryl-1,4-naphthoquinones – Green palladium-catalysed Suzuki cross couplings

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IV, ¹H and ¹³C NMR Spectra of the Products

2-Hydroxy-3-iodonaphthalene-1,4-dione (6)

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Figure S1 - Infrared spectrum of 2-hydroxy-3-iodonaphthalene-1,4-dione (6)
Figure S2 - $^1$H NMR Spectra of 2-hydroxy-3-iodonaphthalene-1,4-dione (6)
Figure S3 - $^{13}$C NMR Spectra of 2-hydroxy-3-iodonaphthalene-1,4-dione (6)

2-Amino-3-iodonaphthalene-1,4-dione (7)

Figure S4 - Infrared spectrum of 2-amino-3-iodonaphthalene-1,4-dione (7)
Figure S5 - $^1$H NMR Spectra of 2-amino-3-iodonaphthalene-1,4-dione (7)
**Figure S6** - $^{13}$C NMR Spectra of 2-amino-3-iodonaphthalene-1,4-dione (7)

2-Bromo-3-hydroxynaphthalene-1,4-dione (8)

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**Figure S7** - Infrared spectrum of 2-bromo-3-hydroxynaphthalene-1,4-dione (8)
Figure S8 - $^1$H NMR Spectra of 2-bromo-3-hydroxynaphthalene-1,4-dione (8)
Figure S9 - $^{13}$C NMR Spectra of 2-bromo-3-hydroxynaphthalene-1,4-dione (8)

2-Hydroxi-3-phenylnaphthalene-1,4-dione (10a)

Figure S10 - Infrared Spectrum of 2-hydroxi-3-phenylnaphthalene-1,4-dione (10a)
Figure S11 — $^1$H NMR Spectrum of 2-hydroxi-3-phenylanthalene-1,4-dione (10a)
Figure S12 $^1$H NMR Spectra of 2-hydroxi-3-phenylnaphthalene-1,4-dione (10a)

Figure S13 $^{13}$C NMR Spectra of 2-hydroxi-3-phenylnaphthalene-1,4-dione (10a)
2-(4-Fluorophenyl)-3-phenylnaphthalene-1,4-dione (10b)

**Figure S14** Infrared spectrum of 2-(4-fluorophenyl)-3-phenylnaphthalene-1,4-dione (10b)
Figure S15 - $^1$H NMR Spectra of 2-(4-fluorophenyl)-3-phenylnaphthalene-1,4-dione (10b)
Figure S16 - $^{13}$C NMR Spectra of 2-(4-fluorophenyl)-3-phenynaphthalene-1,4-dione (10b)

2-(3-Fluorophenyl)-3-phenynaphthalene-1,4-dione (10c)

Figure S17 Infrared spectrum of 2-(3-fluorophenyl)-3-phenynaphthalene-1,4-dione (10c)
Figure S18 - $^1$H NMR Spectra of 2-(3-fluorophenyl)-3-phenylnaphthalene-1,4-dione (10c)

Figure S19 - $^{13}$C NMR Spectra of 2-(3-fluorophenyl)-3-phenylnaphthalene-1,4-dione (10c)
Figure S20 - Infrared spectrum of 2-hydroxy-3-(thiophen-2-yl)naphthalene-1,4-dione (10d)
Figure S21 - $^1$H NMR Spectra of 2-hydroxy-3-(thiophen-2-yl)naphthalene-1,4-dione (10d)
Figure S22 - $^{13}$C NMR Spectra of 2-hydroxy-3-(thiophen-2-yl)naphthalene-1,4-dione (10d)

2-Hydroxy-3-(thiophen-3-yl)naphthalene-1,4-dione (10e)

Figure S23 - Infrared spectrum of 2-hydroxy-3-(thiophen-3-yl)naphthalene-1,4-dione (10e)
Figure S24 - $^1$H NMR Spectra of 2-hydroxy-3-(thiophen-3-yl)naphthalene-1,4-dione (10e)

Figure S25 - $^{13}$C NMR Spectra of 2-hydroxy-3-(thiophen-3-yl)naphthalene-1,4-dione (10e)
3-(3-Hydroxy-1,4-dioxo-1,4-dihyronaphthalen-2-y)benzaldehyde (10f)

**Figure S26** - Infrared spectrum of 3-(3-Hydroxy-1,4-dioxo-1,4-dihyronaphthalen-2-y)benzaldehyde (10f)
Figure S27 - $^1$H NMR Spectra of 3-(3-Hydroxy-1,4-dioxo-1,4-dihydronaphthalen-2-yl)benzaldehyde (10f)
**Figure S28** $^{13}$C NMR Spectra of 3-(3-Hydroxy-1,4-dioxo-1,4-dihydronaphthalen-2-yl)benzaldehyde (10f)

4-(3-hydroxy-1,4-dioxo-1,4-dihydronaphthalen-2-yl)benzaldehyde (10g)

**Figure S29** - Infrared spectrum of 4-(3-hydroxy-1,4-dioxo-1,4-dihydronaphthalen-2-yl)benzaldehyde (10g)
Figure S30 - $^1$H NMR Spectra of 4-(3-hydroxy-1,4-dioxo-1,4-dihyronaphthalen-2-yl)benzaldehyde (10g)

Figure S31 - $^{13}$C NMR Spectra of 4-(3-hydroxy-1,4-dioxo-1,4-dihyronaphthalen-2-yl)benzaldehyde (10g)
2-Hydroxy-3-(4-methoxyphenyl)naphthalene-1,4-dione (10h)

**Figure S32** Infrared spectrum of 2-hydroxy-3-(4-methoxyphenyl)naphthalene-1,4-dione (10h)
Figure S33 - $^1$H NMR Spectra of 2-hydroxy-3-(4-methoxyphenyl)naphthalene-1,4-dione (10h)
Figure S34 - $^1$H NMR Spectra of 2-hydroxy-3-(4-methoxyphenyl)naphthalene-1,4-dione (10h)

2-Hydroxy-3-(3-methoxyphenyl)naphthalene-1,4-dione (10i)

Figure S35 - Infrared spectrum of 2-hydroxy-3-(3-methoxyphenyl)naphthalene-1,4-dione (10i)
Figure S36 - $^1$H NMR Spectra of 2-hydroxy-3-(3-methoxyphenyl)naphthalene-1,4-dione (10i)

Figure S37 - $^{13}$C NMR Spectra of 2-hydroxy-3-(3-methoxyphenyl)naphthalene-1,4-dione (10i)
4-(3-Hydroxy-1,4-dioxo-1,4-dihydronaphthalen-2-yl)benzonitrile (10j)

**Figure S38** - Infrared spectrum of 4-(3-Hydroxy-1,4-dioxo-1,4-dihydronaphthalen-2-yl)benzonitrile (10j)
**Figure S39 -** $^1$H NMR Spectra of 4-(3-Hydroxy-1,4-dioxo-1,4-dihydronaphthalen-2-yl)benzonitrile (10j)

**Figure S40 -** $^{13}$C NMR Spectra of 4-(1,4-dihydro-2-hydroxy-1,4-dioxonaphthalen-3-yl)benzonitrile (10j)
2-Hydroxy-3-(p-tolyl)naphthalene-1,4-dione (10k)

Figure S41 - Infrared spectrum of 2-Hydroxy-3-(p-tolyl)naphthalene-1,4-dione (10k)
Figure S42 - $^1$H NMR Spectra of 2-Hydroxy-3-(p-tolyl)naphthalene-1,4-dione (10k)
Figure S43 - $^{13}$C NMR Spectra of 2-Hydroxy-3-(p-tolyl)naphthalene-1,4-dione (10k)

2-Amino-3-phenylnaphthalene-1,4-dione (11)

Figure S44 - Infrared spectrum of 2-amino-3-phenylnaphthalene-1,4-dione (11)
Figure S45 - $^1$H NMR Spectra of 2-amino-3-phenylnaphthalene-1,4-dione (11)

Figure S46 - $^{13}$C NMR Spectra of 2-amino-3-phenylnaphthalene-1,4-dione (11)