Supporting information

Palladium-Catalyzed Carbonylative Synthesis of Isocoumarins and Phthalides by using Phenyl Formate as a Carbon Monoxide Source

Qing Yuan, Zhen-Bang Chen, Fang-Ling Zhang and Yong-Ming Zhu *
College of Pharmaceutical Sciences, Soochow University, Suzhou, 215123, China.
E-mail: zhuyongming@suda.edu.cn

Table of Contents

Copies of $^1$H and $^{13}$C NMR Spectra for Compounds 3a-3s----------------S2-S20
Copies of $^1$H and $^{13}$C NMR Spectra for Compounds 5a-5i-------------------S21-S29
$^1$H NMR Spectrum of Compound 3a

$^{13}$C NMR Spectrum of Compound 3a
H NMR Spectrum of Compound 3b

13C NMR Spectrum of Compound 3b
\[ \text{H NMR Spectrum of Compound 3d} \]

\[ \text{C NMR Spectrum of Compound 3d} \]
$^1$H NMR Spectrum of Compound 3e

$^{13}$C NMR Spectrum of Compound 3e
$^1$H NMR Spectrum of Compound 3f

$^{13}$C NMR Spectrum of Compound 3f
1\textsuperscript{H} NMR Spectrum of Compound 3h

1\textsuperscript{3}C NMR Spectrum of Compound 3h
$^1$H NMR Spectrum of Compound 3i

$^{13}$C NMR Spectrum of Compound 3i
$^1$H NMR Spectrum of Compound 3k

$^{13}$C NMR Spectrum of Compound 3k
$^1$H NMR Spectrum of Compound 3m

$^{13}$C NMR Spectrum of Compound 3m
$\text{H NMR Spectrum of Compound 3n}$

$\text{13C NMR Spectrum of Compound 3n}$
$^1$H NMR Spectrum of Compound 3o

$^{13}$C NMR Spectrum of Compound 3o


$^1$H NMR Spectrum of Compound 3p

$^{13}$C NMR Spectrum of Compound 3p
$^1$H NMR Spectrum of Compound 5b

$^{13}$C NMR Spectrum of Compound 5b
$^1$H NMR Spectrum of Compound 5c

$^{13}$C NMR Spectrum of Compound 5c
$^1$H NMR Spectrum of Compound 5f

$^{13}$C NMR Spectrum of Compound 5f
$\text{H NMR Spectrum of Compound 5g}$

$\text{13C NMR Spectrum of Compound 5g}$
\[ \text{H NMR Spectrum of Compound 5h} \]

\[ \text{13C NMR Spectrum of Compound 5h} \]
$^1$H NMR Spectrum of Compound 5i

$^{13}$C NMR Spectrum of Compound 5i