Spectra of known coumarins
Spectra of C12

$^1$H NMR Spectrum

$^{13}$C NMR Spectrum

$^{13}$C NMR Spectrum (Expanded)
Spectra of New Coumarins

Spectra of C13

$^1$H NMR Spectrum

$^1$H NMR Spectrum (Expanded)

$^{13}$C NMR Spectrum

$^{13}$C NMR Spectrum (Expanded)
Spectra of C15

\[ ^1H \text{ NMR Spectrum} \]

\[ ^1^H \text{ NMR Spectrum} \]

\[ ^{13}C \text{ NMR Spectrum} \]

\[ ^{13}C \text{ NMR Spectrum} \]

\[ \text{HH COSY Spectrum} \]

\[ \text{HH COSY Spectrum} \]

\[ \text{(Expanded)} \]
Spectra of C18

$^{1}H$ NMR Spectrum

$^{1}H$ NMR Spectrum (Expanded)

FT-IR Spectrum
Spectra of C21

$^1$H NMR Spectrum

$^1$H NMR Spectrum (Expanded)

$^{13}$C NMR Spectrum

FT-IR Spectrum
Spectra of C22

$^1$H NMR Spectrum

$^1$H NMR Spectrum (Expanded)

$^{13}$C NMR Spectrum

FT-IR Spectrum
Spectra of C23

$^1$H NMR Spectrum

$^1$H NMR Spectrum (Expanded)

$^{13}$C NMR Spectrum

$^{13}$C NMR Spectrum (Expanded)
Mass Spectrum
Spectra of C41

$^1$H NMR Spectrum

$^{13}$C NMR Spectrum

$^1$H NMR Spectrum (Expanded)

$^{13}$C NMR Spectrum (Expanded)
Mass Spectrum
Spectra of β-bis(3-methoxy-4-hydroxyphenyl)-α’-(3-methoxy-4-hydroxybenzyl)-hept-1,6-dien-3,5-dione

\(^1\)H NMR Spectrum

\(^{13}\)C NMR Spectrum

FT-IR Spectrum
Spectra of Synthesized Curcumin I

\[ ^{1}H \text{ NMR Spectrum} \]

\[ ^{13}C \text{ NMR Spectrum} \] (Expanded)
DEPT 135 Spectrum

FT-IR Spectrum
Spectra of the Product Under Section 4.4.3.1

Mass Spectrum

FT-IR Spectrum
Spectra of Product of Reaction Under Section 4.4.3.4

Mass Spectrum

FT-IR Spectrum
Spectra of the product of Reaction Under Section 4.4.3.3

\[ ^1H \text{ NMR Spectrum} \]

\[ ^1H \text{ NMR Spectrum (Expanded)} \]

\[ \text{Mass Spectrum} \]

\[ \text{FT-IR Spectrum} \]
Spectra of the Product of Reaction Under Section 4.4.3.2

FT-IR Spectrum

Mass Spectrum