Supplementary Information

Synthesis, and biological evaluation of novel asymmetric naphthalene diimide derivative as anticancer agent depending on ROS generation

Xiaojuan Xu\textsuperscript{a,b,\#}, Senzhen Wang\textsuperscript{a,\#}, Yuan Chang\textsuperscript{a}, Chaochao Ge\textsuperscript{a}, Xinna Li\textsuperscript{a}, Yongli Feng\textsuperscript{a}, Song-qiang Xie\textsuperscript{c}, Chaojie Wang\textsuperscript{a}, Fujun Dai\textsuperscript{a,\*}, Wen Luo\textsuperscript{a,\*}

\textsuperscript{a} Key Lab of Natural Medicine and Immune Engineering, Henan University, Kaifeng 475004, China
\textsuperscript{b} Pharmaceutical College, Henan University, Kaifeng 475004, China
\textsuperscript{c} Institute of Chemical Biology, Henan University, Kaifeng 475004, China

Corresponding author:
\*Tel/ Fax: +86 15938573755/ +86 371 22864665; E-mail: fjdwl@hotmail.com, fjdwl@vip.henu.edu.cn.

\*Tel/ Fax: +86 15225477220/ +86 371 22864665; E-mail: luowen83@henu.edu.cn.
Figure S1. Structure and Spectra of target compounds.

$^1$H NMR spectra of compound 3a

$^{13}$C NMR spectra of compound 3a
$^{1}H$ NMR spectra of compound 3b

$^{13}C$ NMR spectra of compound 3b
$^1$H NMR spectra of compound 3c

$^{13}$C NMR spectra of compound 3c
$^1$H NMR spectra of compound 3d

13C NMR spectra of compound 3d
$^1$H NMR spectra of compound 3e

$^{13}$C NMR spectra of compound 3e
$^1$H NMR spectra of compound 3f

$^{13}$C NMR spectra of compound 3f
$^1$H NMR spectra of compound 3g

$^{13}$C NMR spectra of compound 3g
$^1$H NMR spectra of compound 3h

$^{13}$C NMR spectra of compound 3h
$^1$H NMR spectra of compound 3i

$^{13}$C NMR spectra of compound 3i
$^1$H NMR spectra of compound 4a

$^{13}$C NMR spectra of compound 4a
$^1$H NMR spectra of compound 4b

$^{13}$C NMR spectra of compound 4b
$^1$H NMR spectra of compound 4c

$^{13}$C NMR spectra of compound 4c