Supporting Information

Synthesis and *in vitro* photodynamic activities of di-α-substituted zinc(II) phthalocyanine derivatives

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Fig. S1  $^1$H NMR spectrum of 9b in CDCl$_3$ with a trace amount of pyridine-d$_5$.

Fig. S2  Electronic absorption spectra of 6a and 9a in the RPMI culture medium.

Fig. S3  Visualisation of intracellular fluorescence of HT29 after incubation with 6a-6d and 9a-9b.

$^1$H and $^{13}$C{$^1$H} NMR spectra of all the new compounds
**Fig. S1** $^1$H NMR spectrum of 9b in CDCl$_3$ with a trace amount of pyridine-d$_5$. Signals for the residual solvents are marked with asterisks.
**Fig. S2** Electronic absorption spectra of 6a (——) and 9a (-----), formulated with Cremophor EL, in the RPMI culture medium (both at 8 µM).
**Fig. S3** Visualisation of intracellular fluorescence of HT29 after incubation with (a) 6a, (b) 6b, (c) 6c, (d) 6d, (e) 9a and (f) 9b for 2 h.
In all of the following spectra, residual solvent signals are marked with asterisks.

$^{1}H$ NMR spectrum of 4a in DMSO-d$_6$.

$^{13}C\{^{1}H\}$ NMR spectrum of 4a in CDCl$_3$. 
$^1$H NMR spectrum of 4b in CDCl$_3$.

$^{13}$C{${^1}$H} NMR spectrum of 4b in CDCl$_3$. 
$^1$H NMR spectrum of 4c in CDCl$_3$.

$^{13}$C{$_{^1}$H} NMR spectrum of 4c in CDCl$_3$. 
$^1$H NMR spectrum of 6a in CDCl$_3$ with a trace amount of pyridine-d$_5$.

$^{13}$C $^1$H NMR spectrum of 6a in CDCl$_3$ with a trace amount of pyridine-d$_5$. 
$^1$H NMR spectrum of 6b in CDCl$_3$ with a trace amount of pyridine-d$_5$.

$^{13}$C{$^1$H} NMR spectrum of 6b in CDCl$_3$ with a trace amount of pyridine-d$_5$. 

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$^1$H NMR spectrum of $6c$ in CDCl$_3$ with a trace amount of pyridine-d$_5$.

$^{13}$C{$^1$H} NMR spectrum of $6c$ in CDCl$_3$ with a trace amount of pyridine-d$_5$. 
$^1$H NMR spectrum of 6d in DMSO-$d_6$.

$^{13}$C{$^1$H} NMR spectrum of 6d in DMSO-$d_6$. 
$^1$H NMR spectrum of 8a in CDCl$_3$.

$^{13}$C{$^1$H} NMR spectrum of 8a in CDCl$_3$. 
\(^1\)H NMR spectrum of 8b in CDCl\(_3\).

\(^{13}\)C\{\(^1\)H\} NMR spectrum of 8b in CDCl\(_3\).

S13
$^1$H NMR spectrum of 9a in CDCl$_3$ with a trace amount of pyridine-d$_5$.

$^{13}$C{$^1$H} NMR spectrum of 9a in CDCl$_3$ with a trace amount of pyridine-d$_5$.
$^1$H NMR spectrum of 9b in CDCl$_3$ with a trace amount of pyridine-d$_5$.

$^{13}$C{$^1$H} NMR spectrum of 9b in CDCl$_3$ with a trace amount of pyridine-d$_5$.