Supporting Information

Highly specific and ultrasensitive probe for the imaging of inflammation-induced endogenous hypochlorous acid ‡

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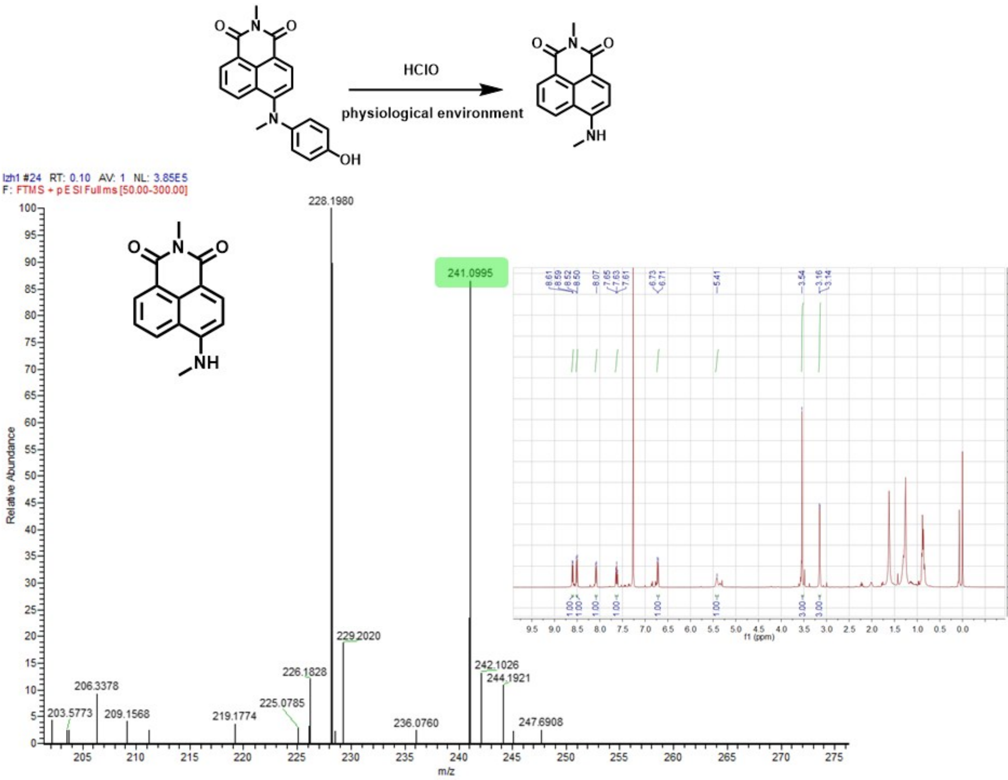


Fig. S1 Proposed mechanism and mass spectrum of **HCA-Green** after reaction with 5 equivalents of NaClO.

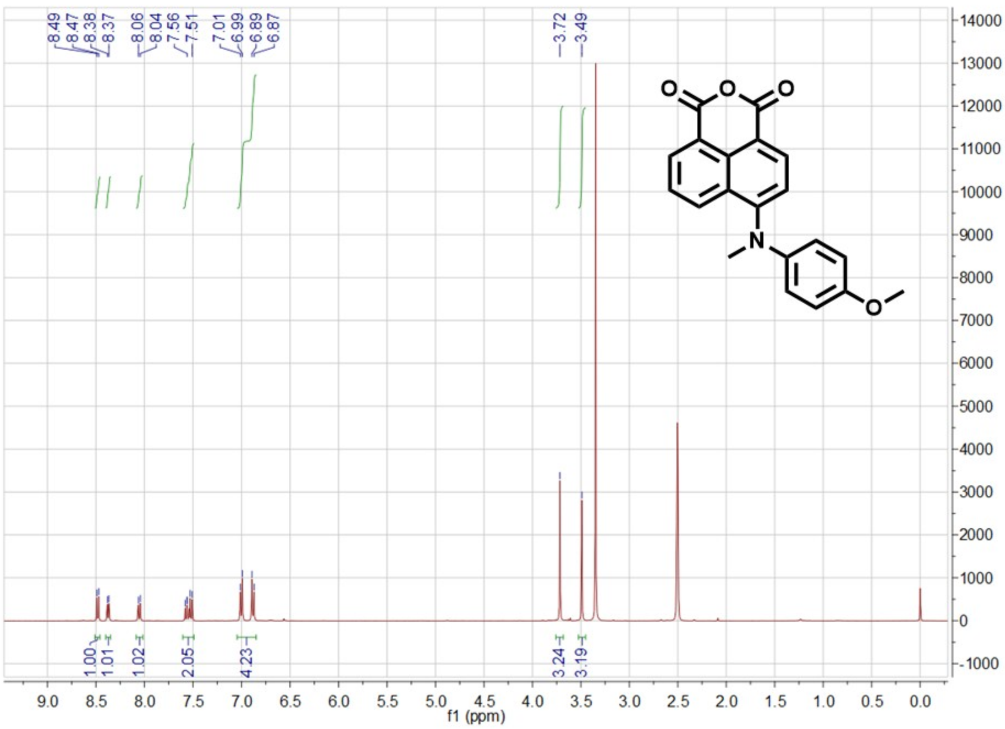


Fig. S2 ^{1}H-NMR spectrum of **1** (400 MHz, DMSO-d_6)

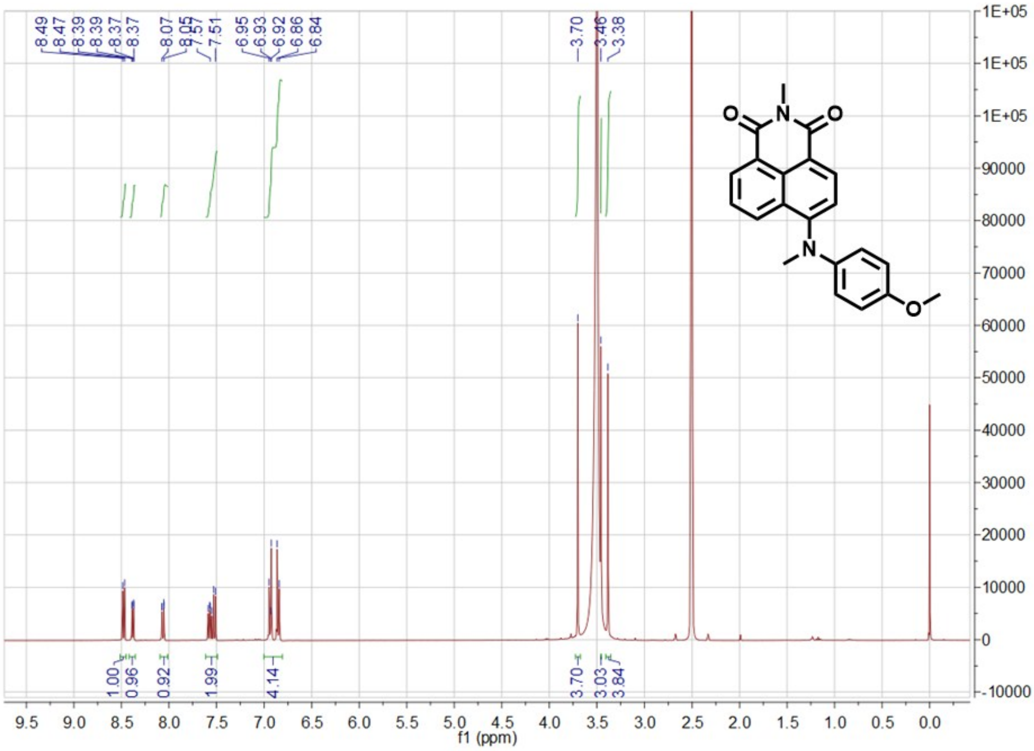


Fig. S3 [1]H-NMR spectrum of **2** (400 MHz, DMSO-d_6)

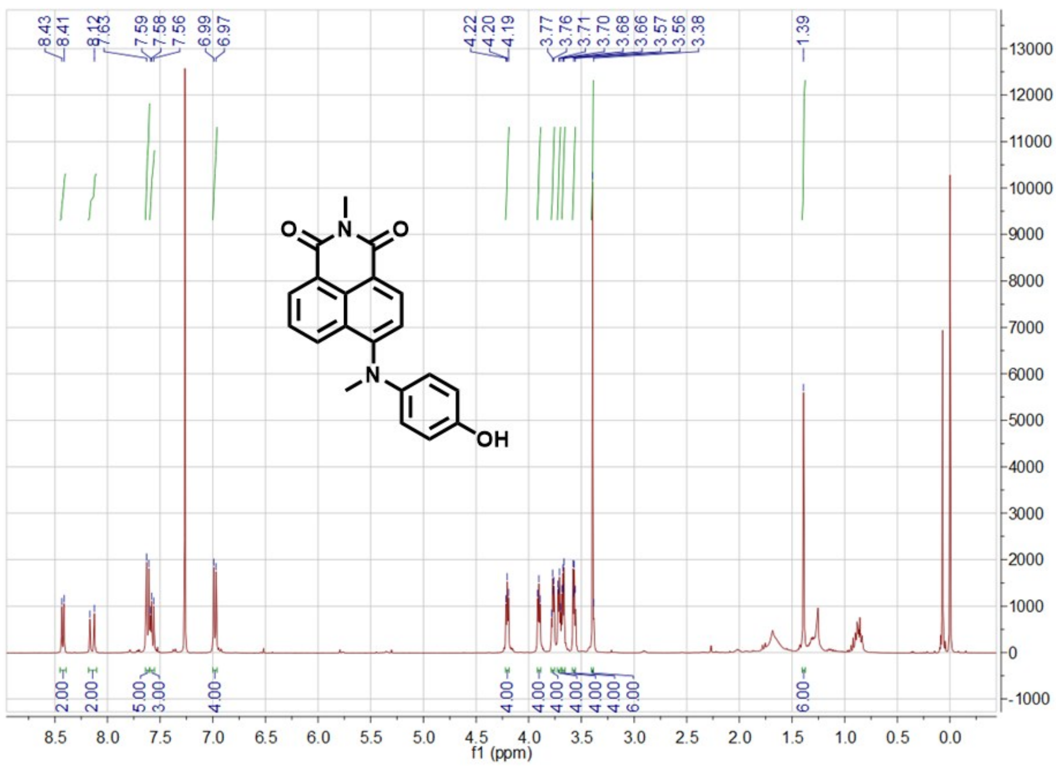


Fig. S4 [1]H-NMR spectrum of **HCA-Green** (400 MHz, DMSO-d_6)

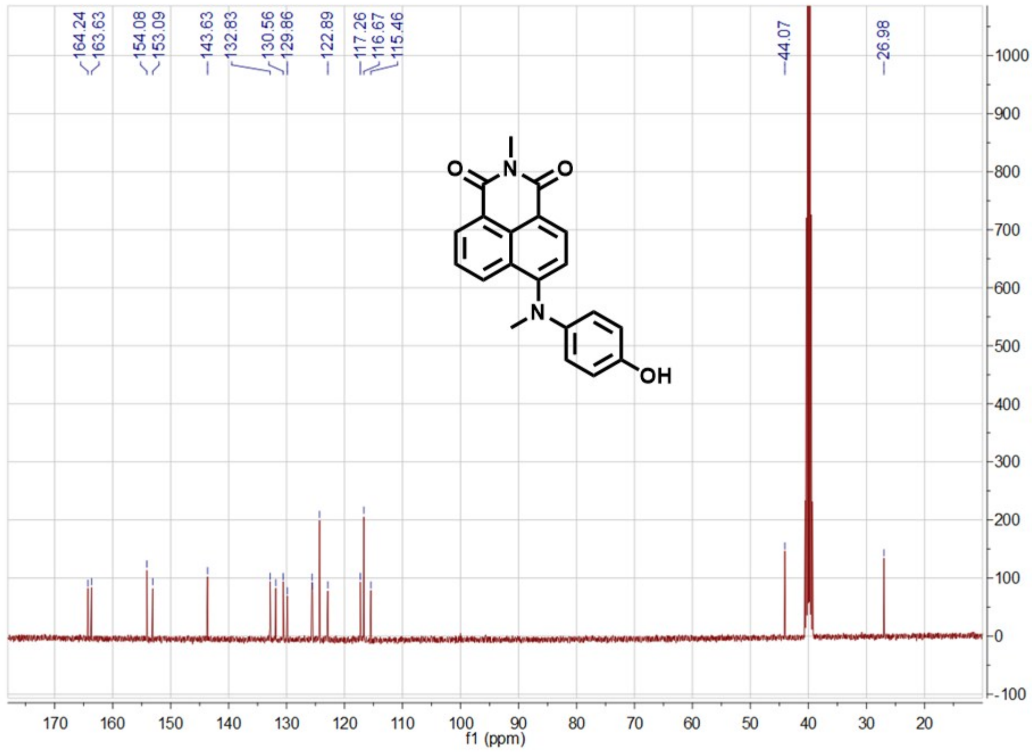


Fig. S5 13C-NMR spectrum of **HCA-Green** (100 MHz, DMSO-d_6)

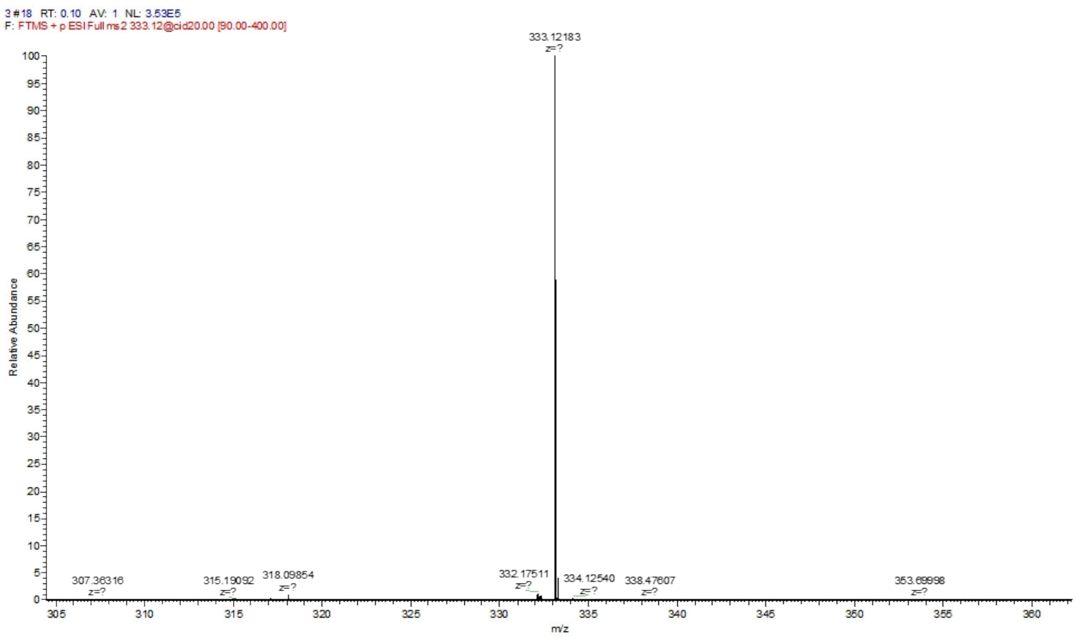


Fig. S6 **HRMS** spectrum of **HCA-Green**

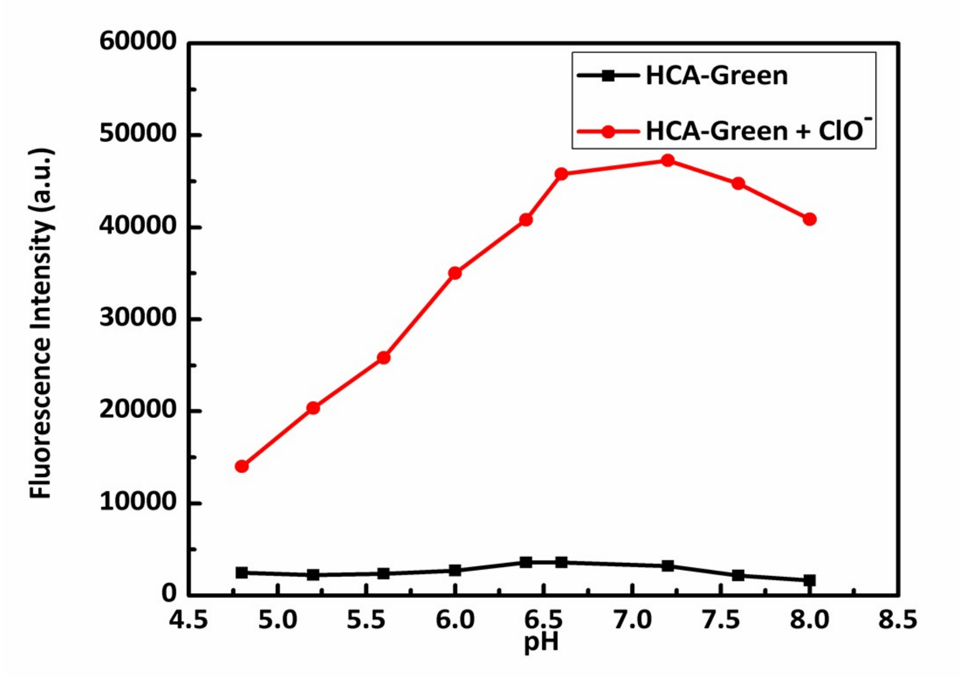


Fig. S7 Effect of pH on the fluorescence ($\lambda_{ex}/_{em}$ = 448/556 nm) of **HCA-Green** (10 μM) after reacting with sodium hypochlorite (50 μM). Reaction time: 5 min.

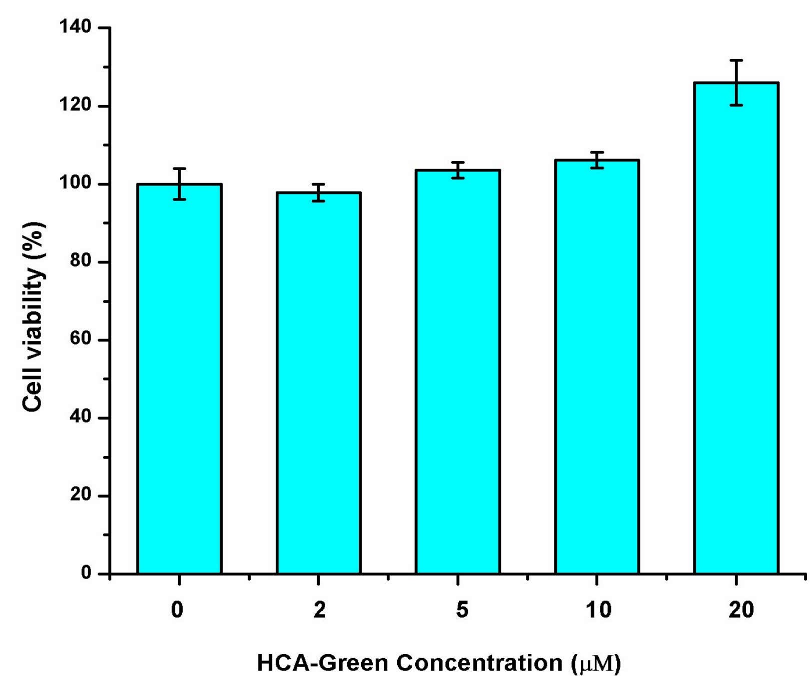


Fig. S8 Cell survival rate of control groups (without **HCA-Green**) and experimental group (with 2, 5, 10, 20 μM of **HCA-Green**). All groups contain 1% DMSO in 100 μL DMEM).

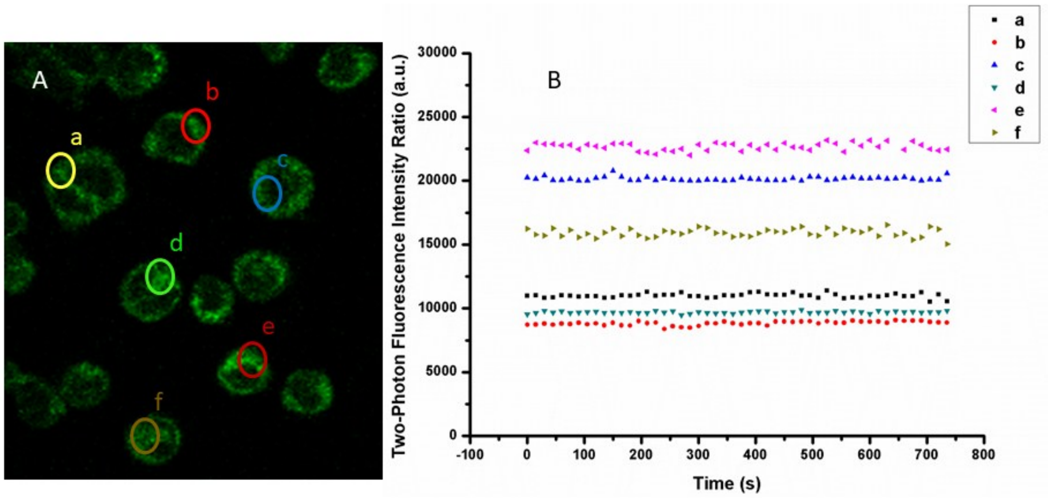
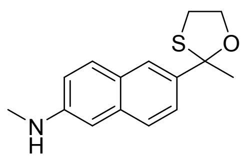
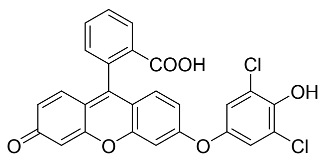
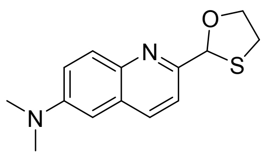
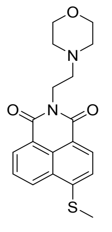
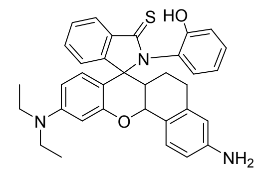
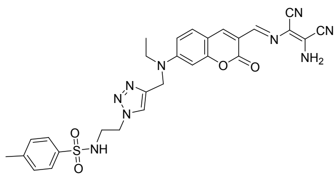
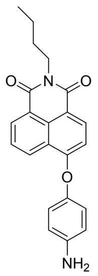
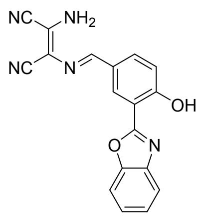
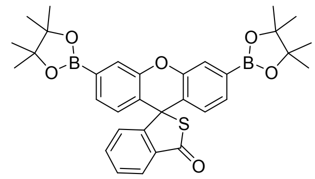
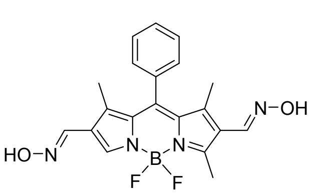
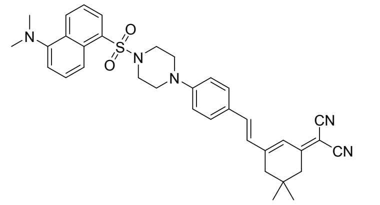
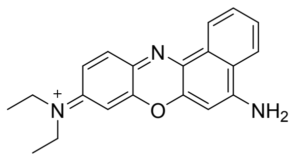
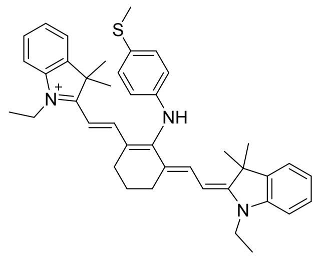
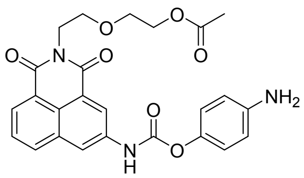
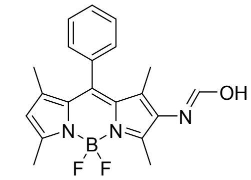
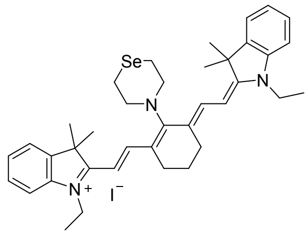
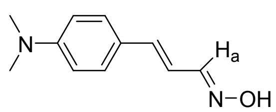
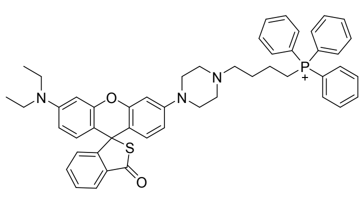


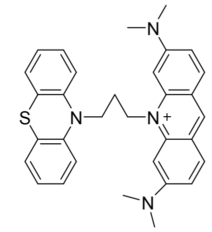
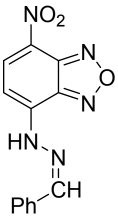
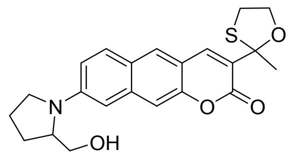
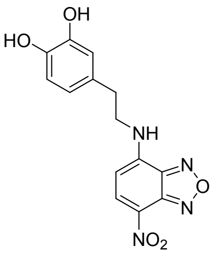
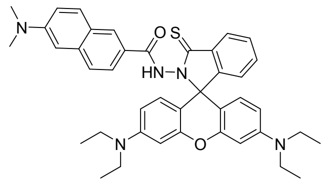
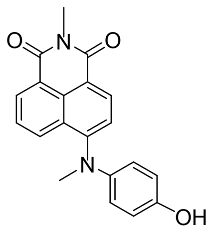
Fig. S9 (A) TPM images of HeLa cells labeled with 1 μg/mL LPS and 1 μg/mL PMA for 1 h and further incubated with **HCA-Green** for 30 min; (B) Two-photon fluorescence intensity from circle a-f as a function of time. The two-photon fluorescence intensity was collected with 15-sec intervals for the duration of 12.5 min under *xyt* mode. Scale bar: 20 μm.

Table S1. Comparison of fluorescent probes for HClO. (OP: One-photon, TP: Two-photon)

Structrure of probe	**$\lambda_{ex}/_{em}$ (nm)**	**Detection Limit (nM)**	**Response Time**	**Reference s**
	375/500	16.6	Within seconds	[1]
	490/527	0.33	< 1 min	[2]
	426/492, 562	89	60 s	[3]

	405/505	674	2.5 min	[4]
	OP: 550/630 TP: 800/630	40	90 s	[5]
	425/480, 554	590	30 s	[6]
	468/557	1.37	2 min	[7]
	360/435	80	30 s	[8]
	498/523	200	Not mentioned	[9]
	488/538, 589	850	15 s	[10]

	370/550, 670	190	25 s	[11]
	600/672	0.0108	< 5 s	[12]
	750/789	0.62	30 s	[13]
	340/460, 570	700	Real-time	[14]
	470/529	500	Within seconds	[15]
	690/786	310	Dozens of seconds	[16]
	450/556	163	30 min	[17]
	553/580	9	1 min	[18]

	475/540	2.7	5 s	[19]
	495/560	2.7	50 s	[20]
	460/598, 633	34.8	Within seconds	[21]
	470/540	9.7	＜30 s	[22]
	350/440, 585	100	50 s	[23]
	OP: 454/556 TP: 810/556	42.3	50 s	**This work**

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