

Small-molecule fluorescent probes for bioactive species in inflammatory disease: arthritis, pneumonia and hepatitis

Xiaolei Zhang,^{#a} Fuyan Tang,^{#a} Wei Shu,^c Dongpeng Li,^a Yuying Liu,^a Haibin Xiao,^{*ab}
Jin Zhou^{*a} and Ping Li^{*b}

*^aSchool of Chemistry and Chemical Engineering, Shandong University of Technology,
Zibo 255000, P. R. China.*

*^bCollege of Chemistry, Chemical Engineering and Materials Science, Shandong
Provincial Key Laboratory of Clean Production of Fine Chemicals, Shandong Normal
University, Jinan 250014, P. R. China.*

*^cSchool of Life Sciences and Medicine, Shandong University of Technology, Zibo
255000, P. R. China.*

[#]These authors contributed equally.

E-mails: haibinxiao@sdut.edu.cn; zhoujin@sdut.edu.cn; lip@sdsu.edu.cn.

Table S1 The summary of inflammation-related fluorescent probes.

Probe No.	Target species	$\lambda_{ex}(\lambda_{Abs})/\lambda_{em}$ (nm)	Response mechanism	Detection limit	Ref.	Application
1	Cys	520/575	Michael addition reaction	0.09 μ M	57	Arthritis
2	ONOO ⁻	410/468(526)	FRET	11.6 nM	58	
3a	ONOO ⁻	480/564(700)	Oxidation reaction	28.06 nM	59	
3b	ONOO ⁻	480/564(808)	Oxidation reaction	652.03 nM		
4	ONOO ⁻	390/505(745)	Oxidation reaction	13 nM	60	
5	ONOO ⁻	490/632	ESIPT and AIE	10 nM	61	
6	HClO	620/655	Oxidation reaction	30 nM	62	
7	HClO	808/936(1237)	ICT	55 nM	63	
8	HClO	430/580	Oxidation reaction	24 nM	64	
9	HClO	650/732	Oxidation reaction	35 nM	65	
10	HClO	560/590	Oxidation reaction	12 nM	66	
11a	HClO	620/669	Oxidation reaction	20.4 nM	67	
11b	HClO	620/669	Oxidation reaction	11.1 nM		
12	HClO	610/669	Oxidation reaction	10.8 nM	68	
13	HClO	450/550	Oxidation reaction	6.5 nM	69	
14	HClO	440/520	ICT	8.3 nM	70	
15	ClO ⁻	385/500	PET	Not mentioned	71	
16	HClO	415/550(680)	ICT	33.9 nM	72	
17	ONOO ⁻ ClO ⁻ ¹ O ₂	600/675 600/713 600/713	ICT	0.97 μ M 0.17 μ M 0.20 μ M	73	
18	HBrO	395/460	Oxidation reaction	30.6 nM	74	
19	NO	448/656	AIE	90 nM	75	

20	HNO	680/730	Aminolysis reaction	50 nM	77	Pneumonia
21	H ₂ S	502/680	ICT	0.18 μM	78	
22	O ₂ ⁻	450/556	Oxidation reaction	0.047 nM	80	
23	O ₂ ⁻	482/565	ICT	0.24 μM	81	
24	NO	463/661	Oxidation elimination reaction	17 nM	82	
25	LTA ₄ H	320(690)/400	Hydrolysis reaction	0.2183 ng/mL	83	
26	LTA ₄ H	670/710	ICT	0.42 μg/mL	84	
27a	ONOO ⁻	360/460	Oxidation reaction	97 nM	85	
27b	Cys	520/590	Michael addition reaction	0.28 μM		
28	SO ₂	550/660	1,4-addition reaction	1.49 nM	86	
29	Esterase N ₂ H ₄	390/571(466) 390/571(466)	ICT	Not mentioned	88	
30	Sec	610/750(800)	ICT	90 nM	89	
31	Sec	600/744(780)	ICT	3 nM	90	
32	polarity	582-646/635-743	ICT		91	
33a	lipid droplet	405/550	ICT		92	
33b		405/552				
33c		405/547				
34	Cys	660/712	ICT	82 nM	93	