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Supporting Information

A Two-Photon AIEgen for Simultaneous Dual-Color Imaging of Atherosclerotic Plaques

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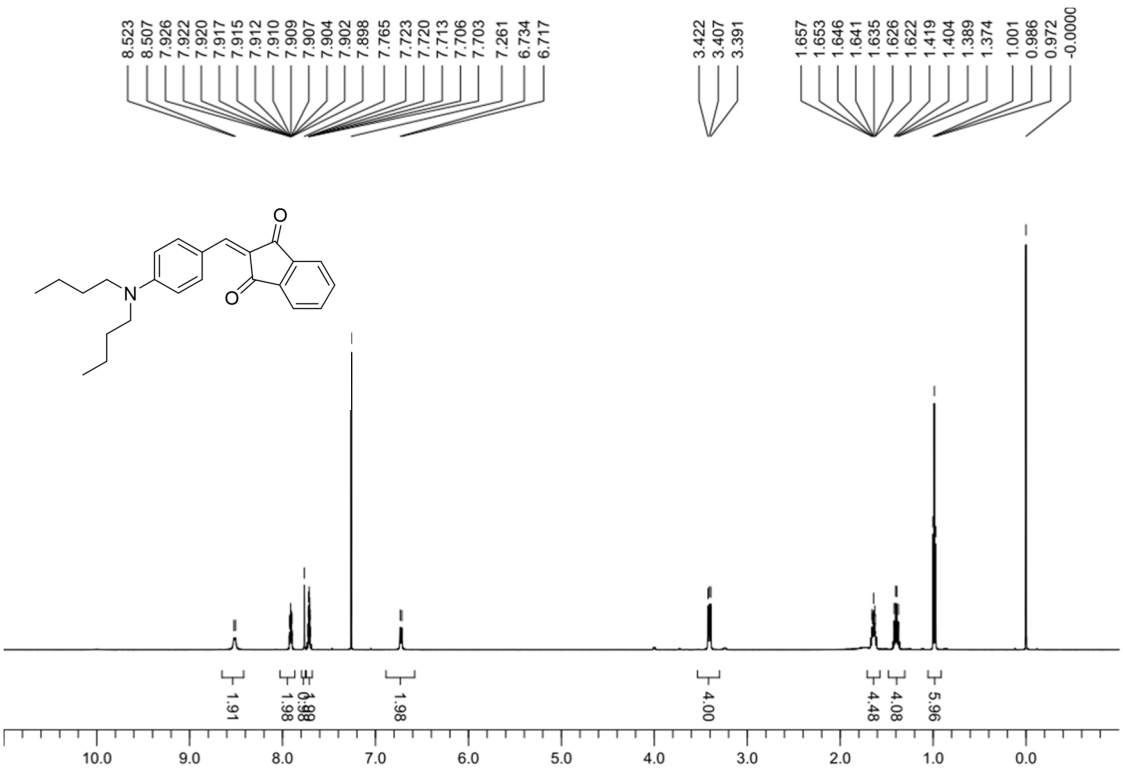

Figure S1. ^{1}H NMR spectra of IND (500 MHz, DMSO-d_6).

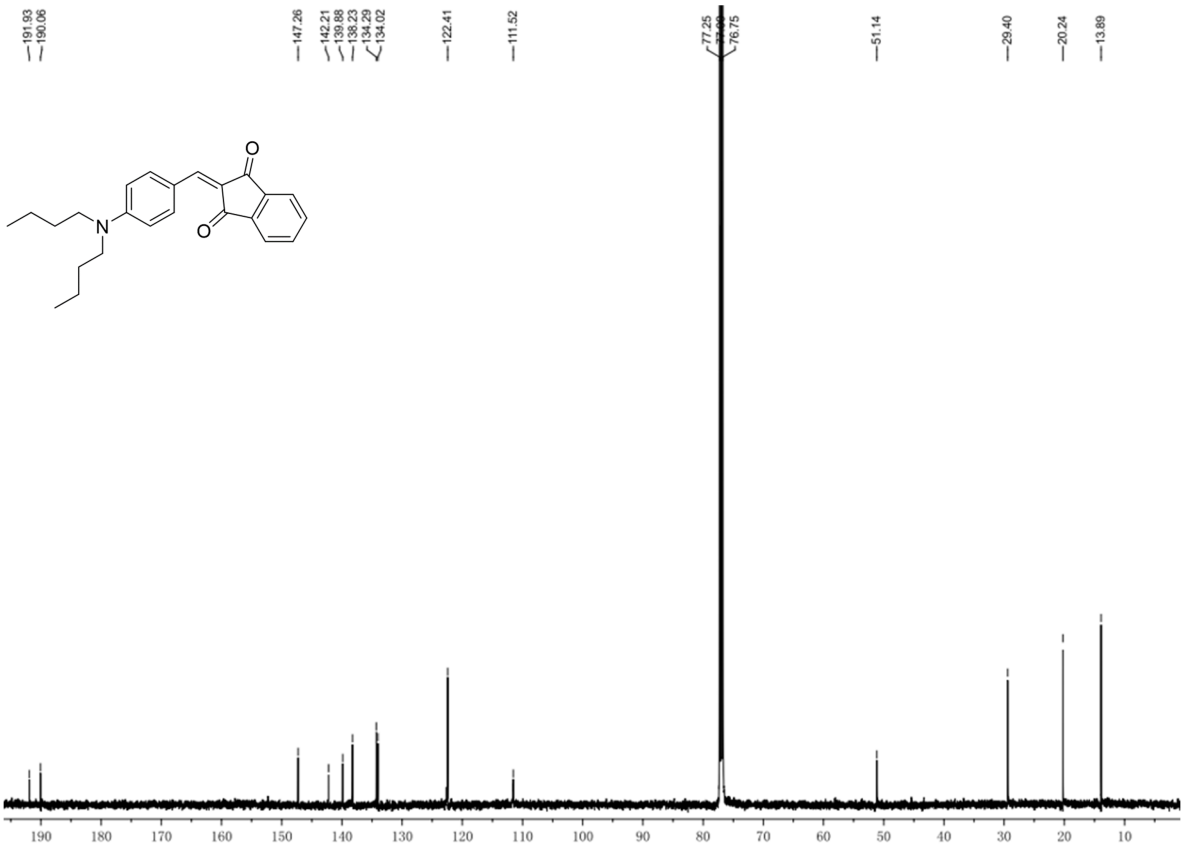

Figure S2. ^{13}C NMR spectra of IND (125 MHz, DMSO-d_6).

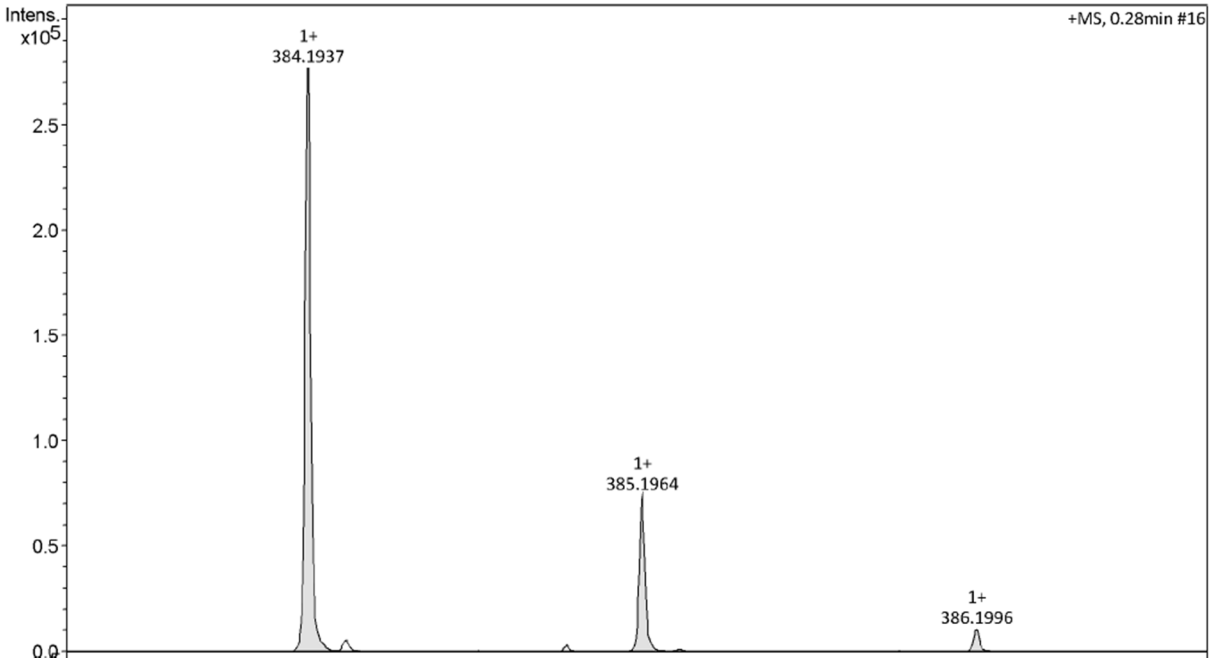

Figure S3. HRMS spectra of IND.

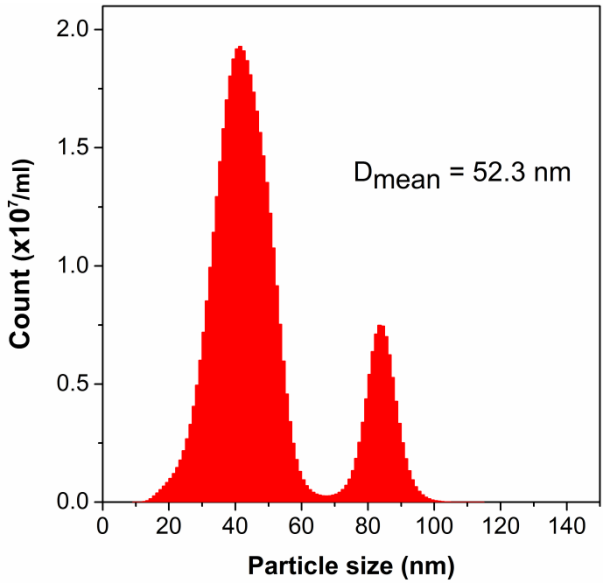

Figure S4. Particle size of aggregates of IND (10 μM) formed in water.

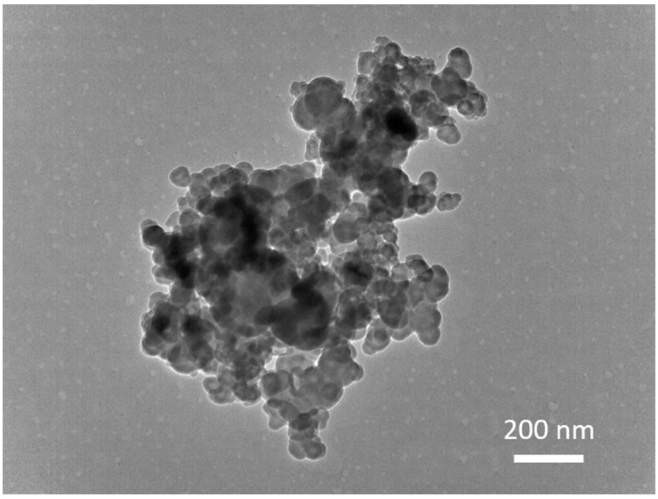

Figure S5. TEM image of IND aggregates.

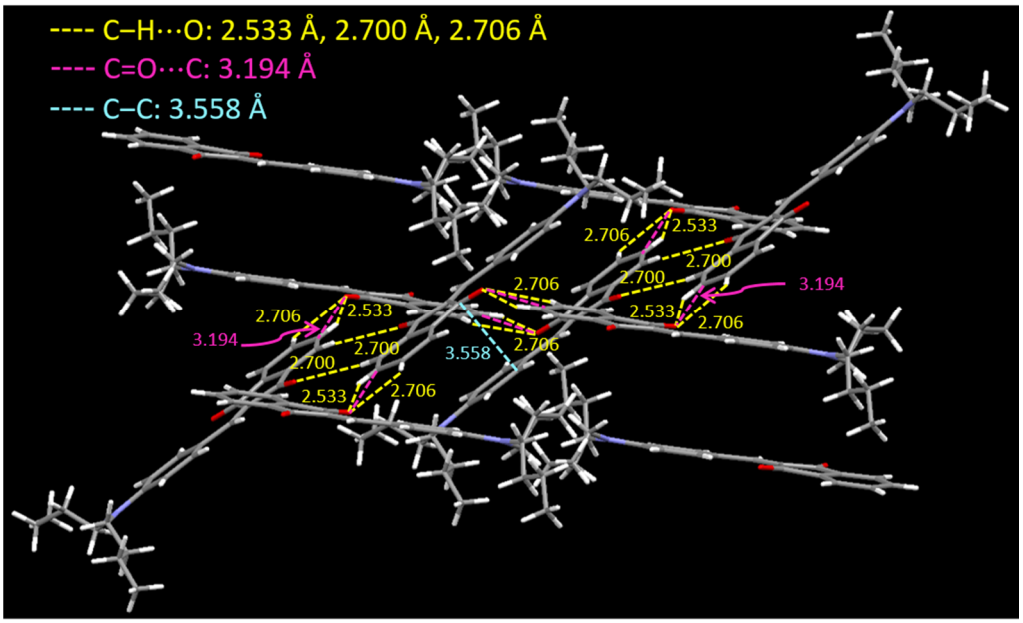

Figure S6. Multiple intermolecular interactions of IND in single crystal.

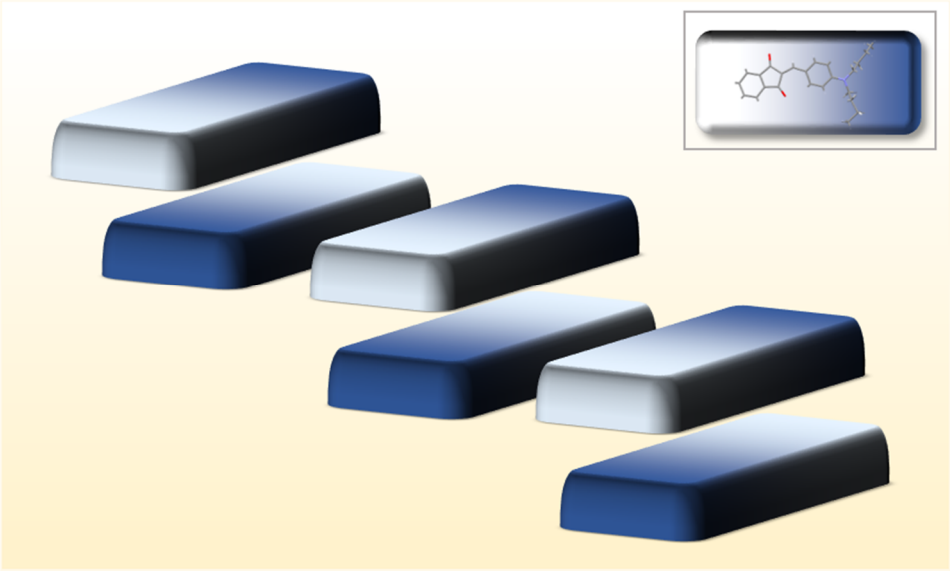

Figure S7. Representative diagram for the step-like packing mode of IND.

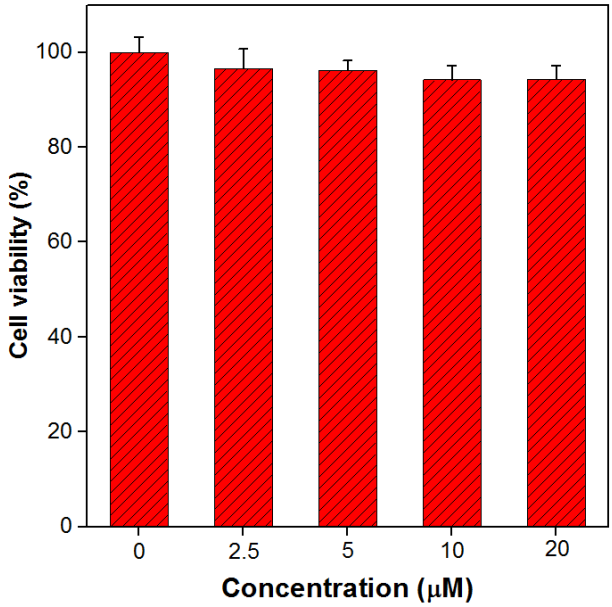

Figure S8. Cytotoxicity of IND on HeLa cells evaluated by a CCK-8 assay.

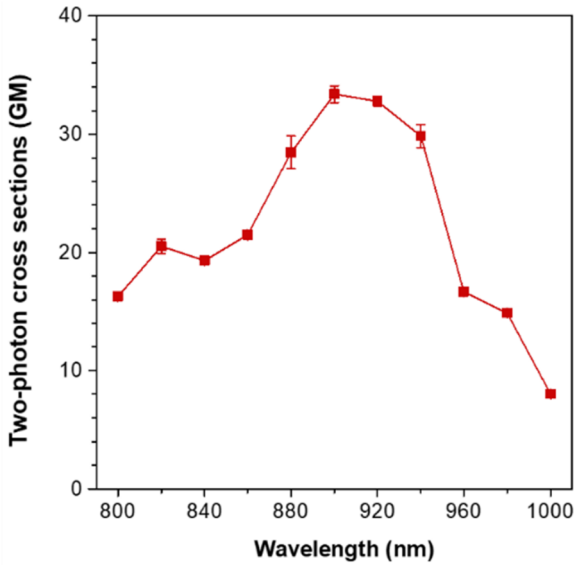

Figure S9. Two-photon absorption cross-sections of IND with fluorescein as the reference.

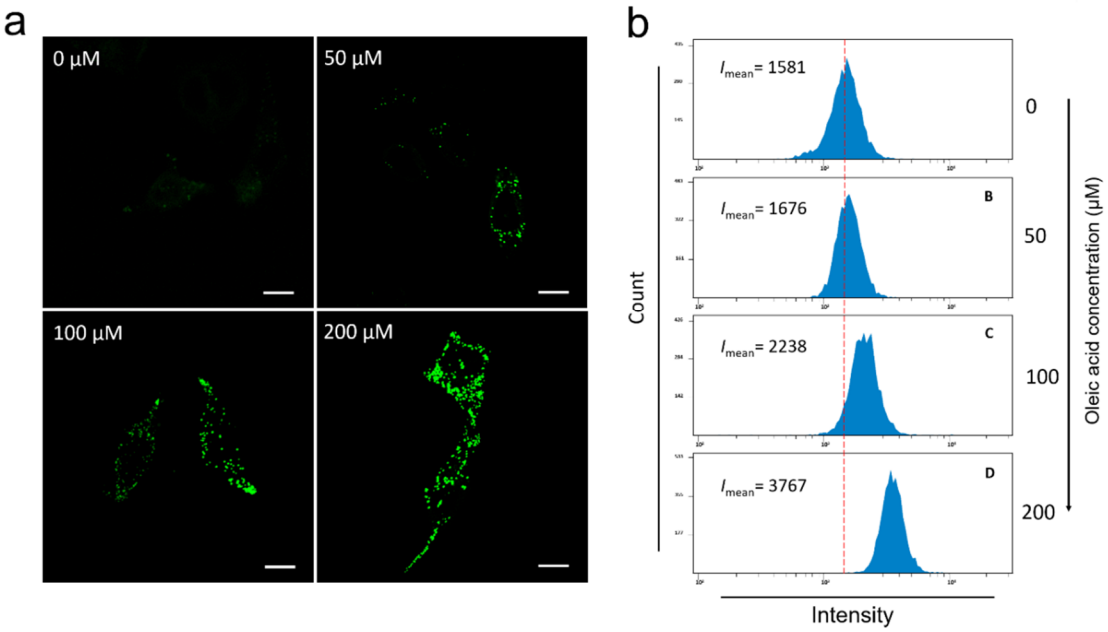

Figure S10. a) Representative two-photon fluorescence images of living HeLa cells stained with 20 μM IND for 30 minutes after treatment with different concentrations of oleic acid (0, 50, 100 and 200 μM. Quantitative measurement of the fluorescence of IND-labeled living HeLa cells after incubating with various concentrations of oleic acid by flow cytometry. λ_{ex}=900 nm for a) and λ_{ex}=488 nm for b). Scale bar, 15 μm.

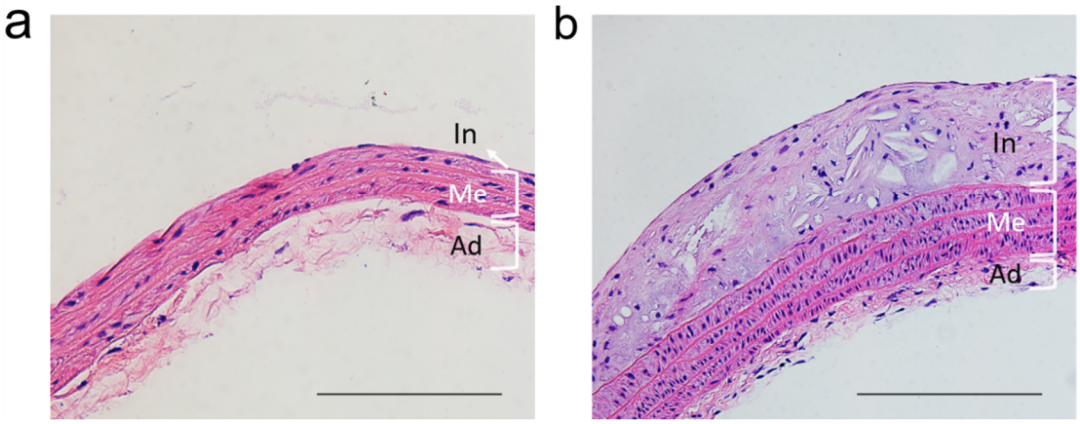

Figure S11. Histologic sectioned specimen of the mouse aorta stained with hematoxylin and eosin (H&E) indicating the intima (In), media (Me) and adventitia (Ad) in a) normal tissue and in b) atherosclerotic plaque of the artery. Scale bar, 200 μm.

Table S1. Photophysical properties of IND in THF/water mixture with different water fractions (f_w).

f_w (%)	λ_{ab} [nm][a)]	λ_{em} [nm][b)]	Φ_F [%][c)]	τ (ns)[d)]	k_r [10^7 S^{-1}][e)]	k_{nr} [10^8 S^{-1}][f)]
0	484	528	0.6	0.97	0.62	10.25
80	509	549	0.3	1.79	0.17	5.57
99	493	632	9.8	5.43	1.80	1.66
Solid	515	637	11.7	11.1	1.05	0.80

a) Maximum absorption wavelength; b) Maximum emission wavelength; c) Absolute quantum yield; d) Average fluorescence lifetime; e) Radiative decay rate $k_r = \Phi/\tau$; f) Non-radiative decay rate $k_{nr} = (1-\Phi)/\tau$. [IND] = 10 μM.

Additional supporting movies

Movie 1. Fluorescent change of sunflower oil after mixing with a same volume of water under 365 nm UV illumination. IND concentration, 10 μM.

Movie 2. Representative 3D image of a living foam cell stained by IND under two-photon microscope excited by 900 nm laser.