Supplementary Material

Nicotinamide-Appended Fluorophores as Fluorescent Redox Sensors


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Figure S1: (a) The reversible oxidation/reduction of nicotinamide, and structures of the two nicotinamide-containing redox cofactors, (b) nicotinamide adenine dinucleotide (NAD\textsuperscript{+}), and (c) nicotinamide adenine dinucleotide phosphate (NADP\textsuperscript{+}).
Figure S2: Normalised fluorescence emission spectra of (a) NCR1 (10 µM, $\lambda_{ex} = 320$ nm), (b) NCR2 (10 µM, $\lambda_{ex} = 350$ nm), (c) NNpR1 (10 µM, $\lambda_{ex} = 405$ nm), and (d) NNpR2 (10 µM, $\lambda_{ex} = 405$ nm) in 20:80 MeCN:HEPES buffer (5 mM; black), upon addition of sodium dithionite (10 eq., blue) and subsequent addition of hydrogen peroxide (20 eq., red).
Figure S3: UV/visible absorption spectra of NNpR1 upon reduction at (a) -0.53 V and (b) -1.05 V, and of NNpR2 upon reduction at (c) -0.64 V and (d) -1.40 V (1 mM, with 0.1 M tetrabutylammonium hexafluorophosphate in MeCN).
Figure S4: Photographs of (a) NNpR1 before reduction, and (b) after chronoamperometry at -1.68 V; and (c) NNpR2 before reduction, and (d) after chronoamperometry at -1.80 V. All samples 1 mM in MeCN, illuminated by short-wave (254 nm) UV lamp.
Figure S5: Cellular viability as a percentage of control cells of A549 cells incubated with various concentrations of NNPRI for 4 h. Error bars represent the standard deviation of eight replicates.