

Supplementary Material

Nicotinamide-Appended Fluorophores as Fluorescent Redox Sensors

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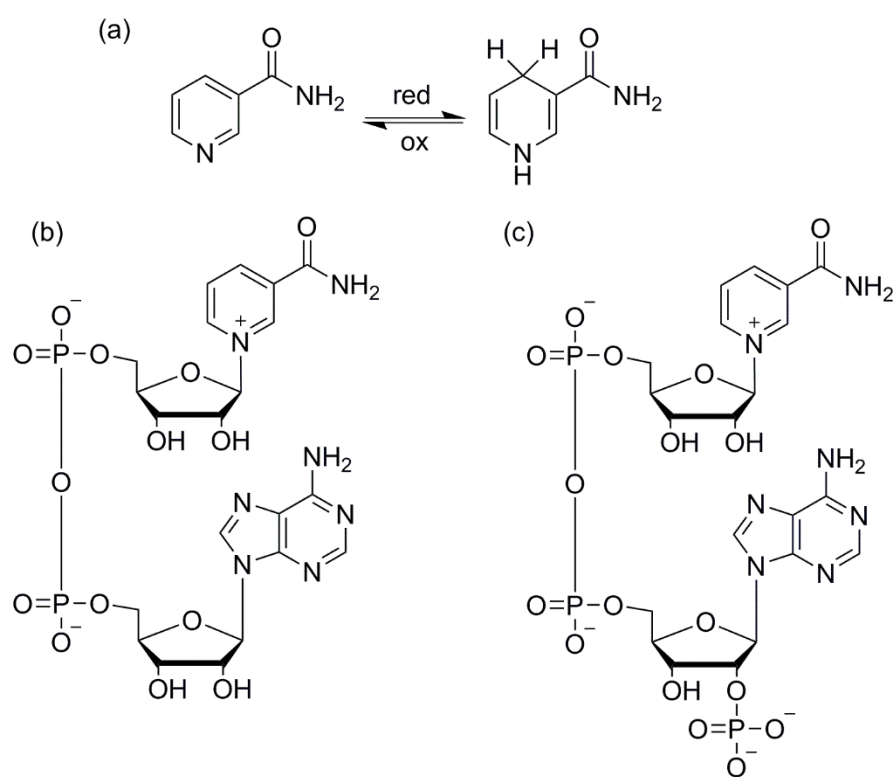


Figure S1: (a) The reversible oxidation/reduction of nicotinamide, and structures of the two nicotinamide-containing redox cofactors, (b) nicotinamide adenine dinucleotide (NAD^+), and (c) nicotinamide adenine dinucleotide phosphate (NADP^+).

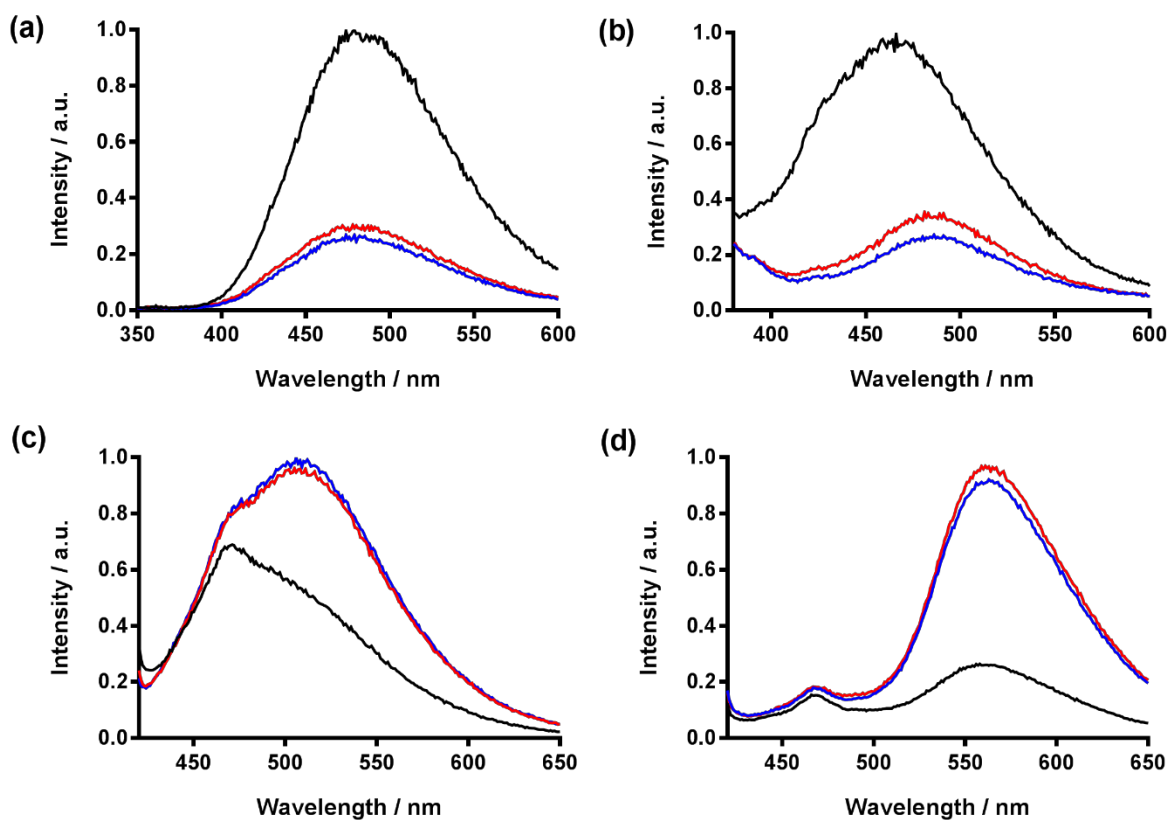


Figure S2: Normalised fluorescence emission spectra of (a) **NCR1** ($10 \mu\text{M}$, $\lambda_{\text{ex}} = 320 \text{ nm}$), (b) **NCR2** ($10 \mu\text{M}$, $\lambda_{\text{ex}} = 350 \text{ nm}$), (c) **NNpR1** ($10 \mu\text{M}$, $\lambda_{\text{ex}} = 405 \text{ nm}$), and (d) **NNpR2** ($10 \mu\text{M}$, $\lambda_{\text{ex}} = 405 \text{ nm}$) 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).

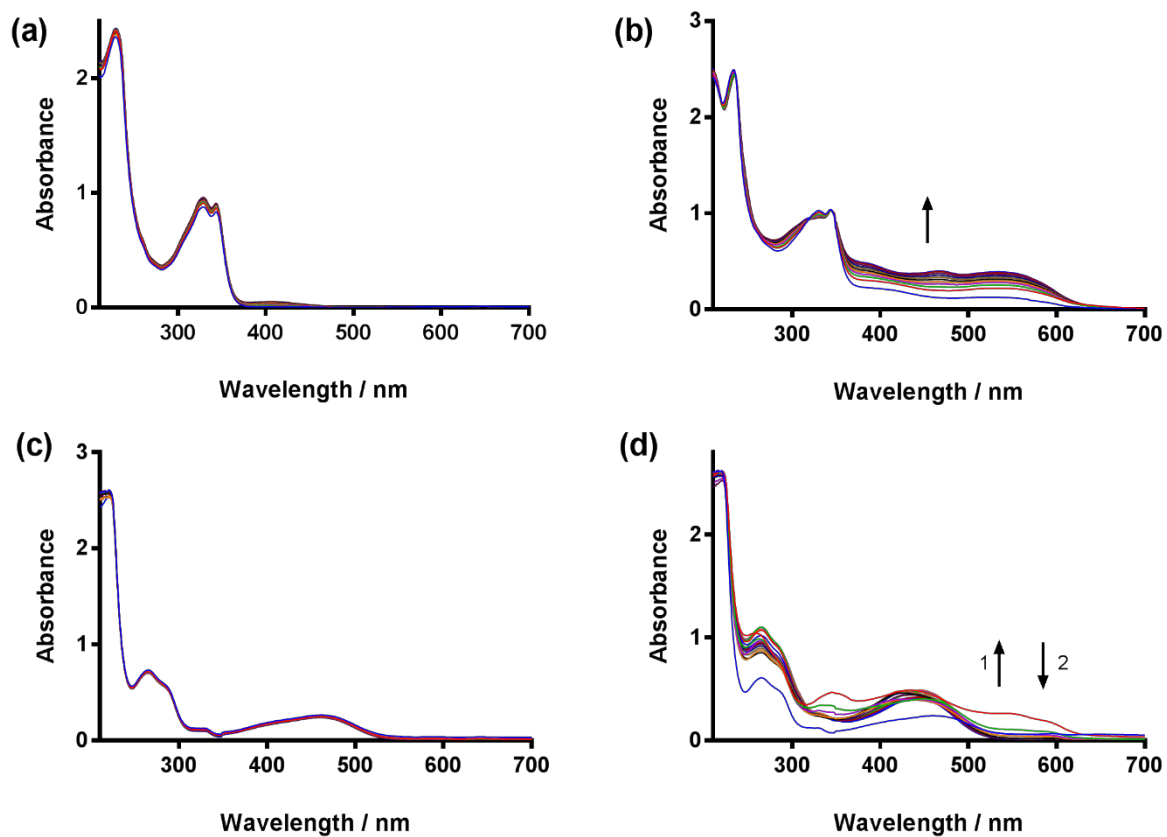


Figure S3: UV/visible absorption spectra of **NNpR1** upon reduction at (a) -0.53 V and (b) -1.05 V, and of **NNpR2** upon reduction at (c) -0.64 V and (d) -1.40 V (1 mM, with 0.1 M tetrabutylammonium hexafluorophosphate in MeCN).

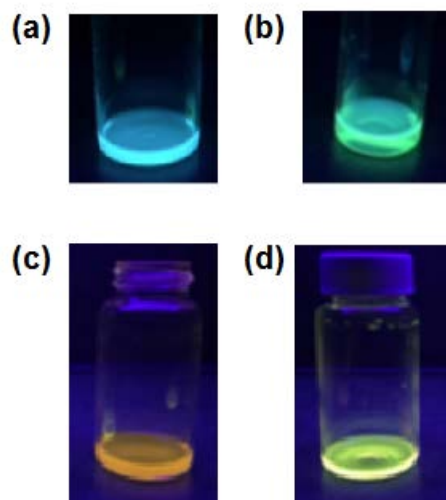


Figure S4: Photographs of (a) **NNpR1** before reduction, and (b) after chronoamperometry at -1.68 V; and (c) **NNpR2** before reduction, and (d) after chronoamperometry at -1.80 V. All samples 1 mM in MeCN, illuminated by short-wave (254 nm) UV lamp.

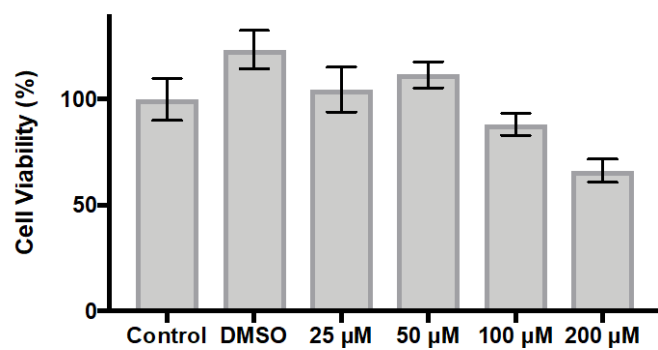


Figure S5: Cellular viability as a percentage of control cells of A549 cells incubated with various concentrations of **NNpR1** for 4 h. Error bars represent the standard deviation of eight replicates.