Supporting Information

Development, Characterisation and Neuroprotective Effects of Polymer-Drug Conjugate Nano-Polyplex: Working Towards a Multi-Target Treatment for Neurodegenerative Diseases

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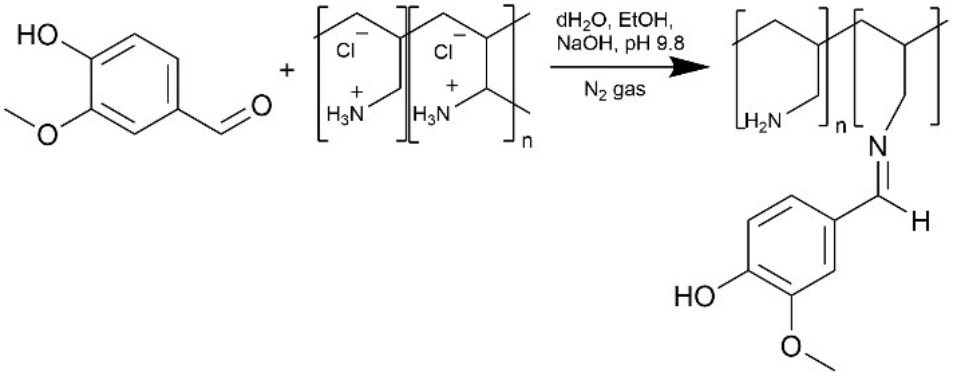

Figure S1. Illustration of the PAH and Vanillin conjugate synthesis (NM15).

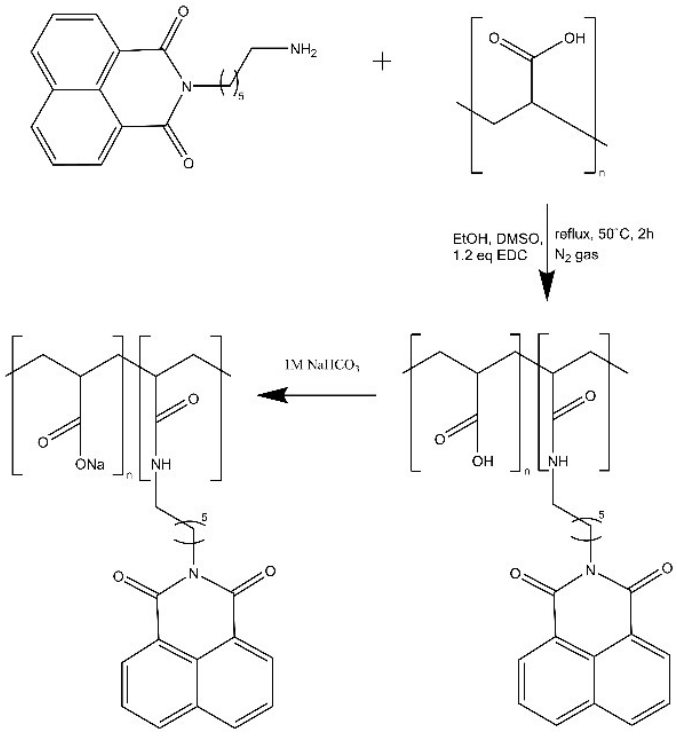

Figure S2. Illustration of the conjugate synthesis of PAA and naphthalimidohexylamine (N5).

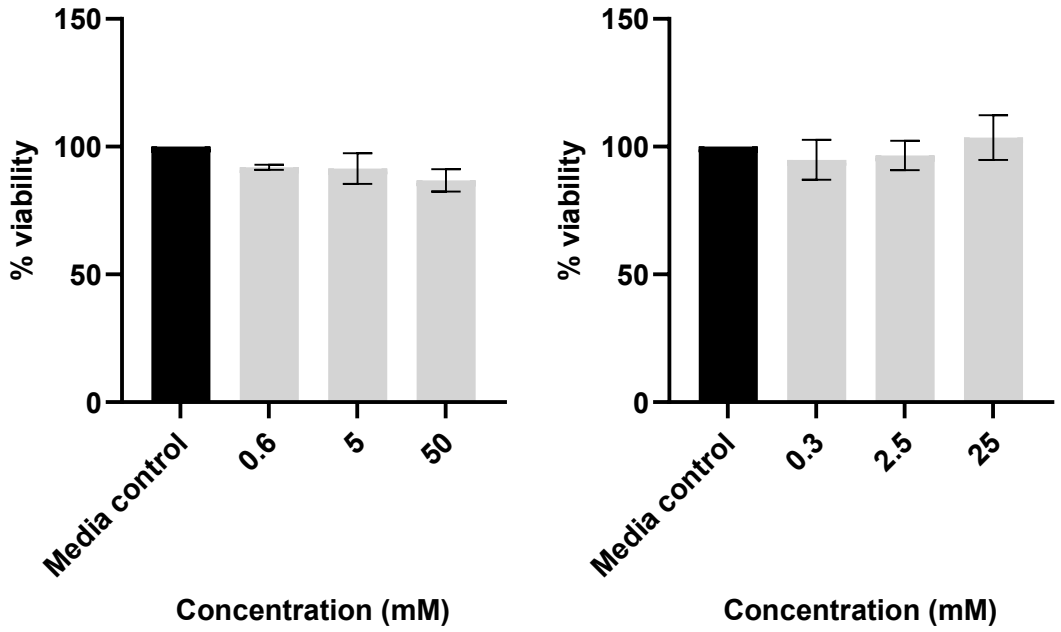

Figure S3. Cell viability of Tris-HCl (pH 7.4) in (**A**) undifferentiated SH-SY5Y cells and (**B**) BV-2 cells determined using an MTT assay after 24 h. Data presented as mean ±SEM (n=3 independent experiments), no significant difference was observed *via* One-way ANOVA ($p > 0.05$), and Dunnett's multiple comparisons tests.

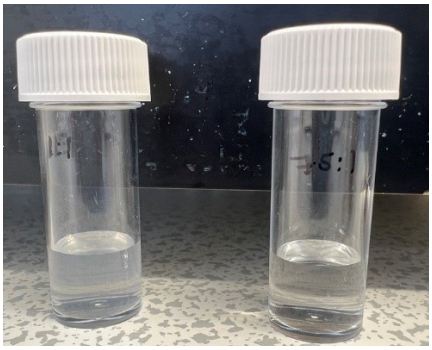

Figure S4. Translucent solution of N5NM15 at a 1:1 ratio (**left**) and clear solution of N5NM15 at a 7.5:1 ratio (**right**).

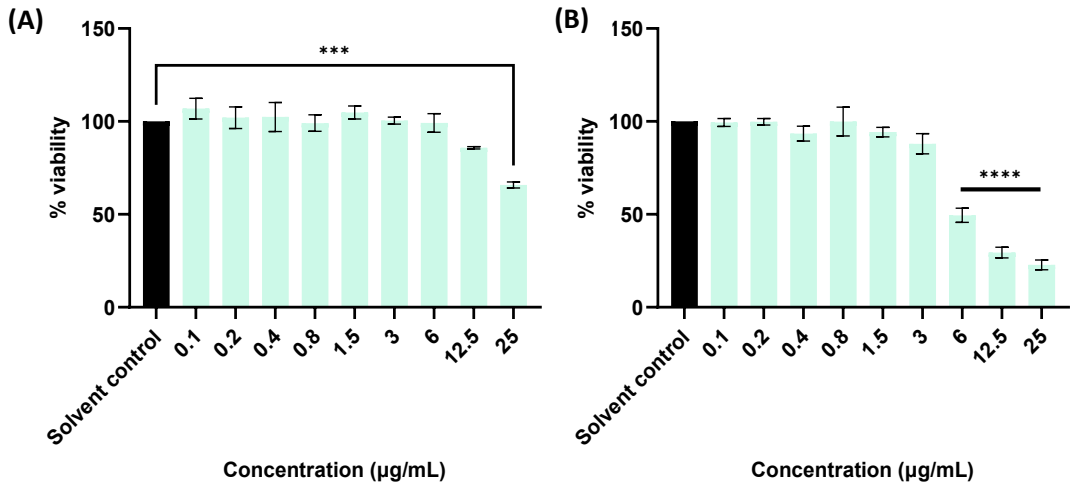

Figure S5. Cell viability of HEXNAP in (**A**) undifferentiated SH-SY5Y cells and (**B**) BV-2 cells determined using an MTT assay after 24 h of treatment. Data presented as mean ±SEM (n=3 independent experiments), significant difference *via* One-way ANOVA (****p ≤ 0.0001), and Dunnett's multiple comparisons tests.

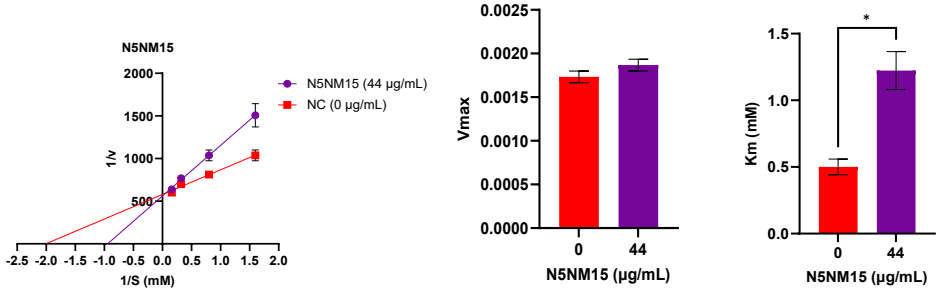

Figure S6. Ellman's BuChE kinetic study of N5NM15 nano-polyplex at a concentration of 44:12.5 µg/mL. The x-axis represents the concentration of N5 in the N5NM15 nano-polyplex, as depicted in the V_{max} and K_m graphs. Data presented as mean ±SEM (n=3), significant difference *via* t-test (*p ≤ 0.05).

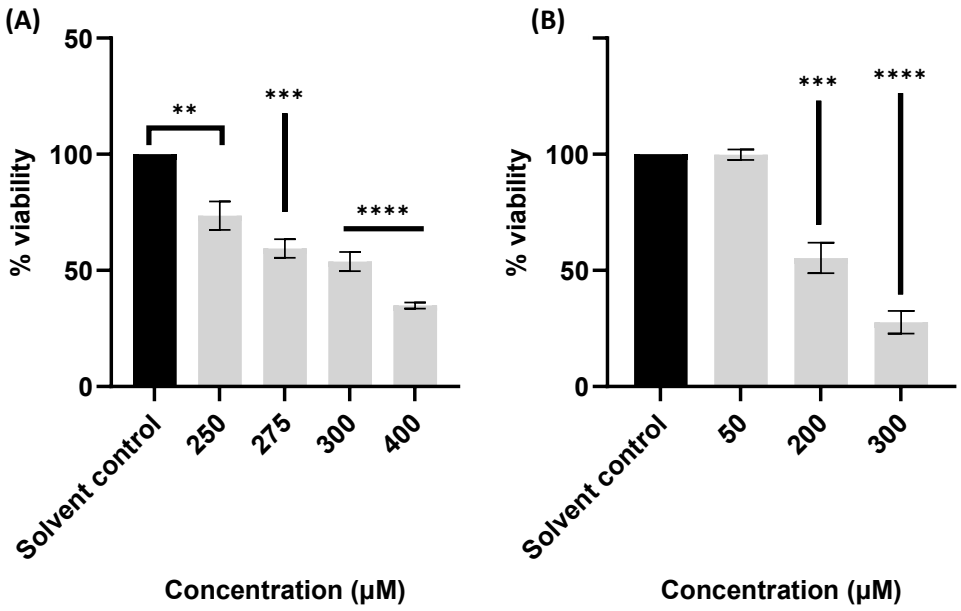

Figure S7. Cell viability of H_2O_2 in (**A**) undifferentiated SH-SY5Y cells and (**B**) BV-2 cells determined using an MTT assay after 24 h. Data presented as mean ±SEM (n=3 independent experiments), significant difference *via* One-way ANOVA (****p ≤ 0.0001), and Dunnett's multiple comparisons tests.

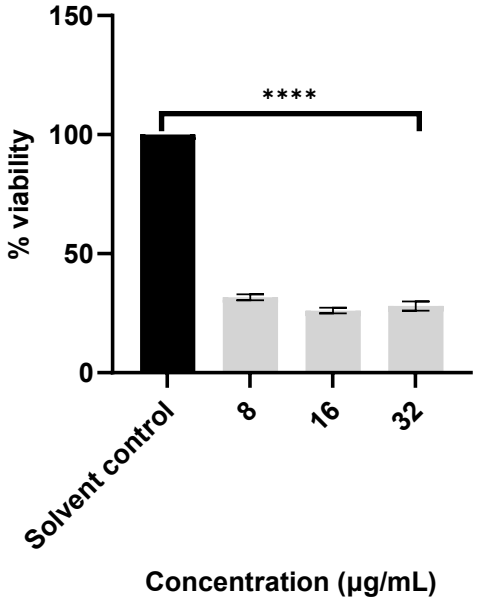

Figure S8. Cell viability of LPS in BV-2 cells determined using an MTT assay after 24 h. Data presented as mean ±SEM (n=3 independent experiments), significant difference *via* One-way ANOVA (****p ≤ 0.0001), and Dunnett's multiple comparisons tests.