

2.3.12 Photon Correlation Spectroscopy (PCS)

PCS was used to assess the size of polyplexes produced with cationic vectors. Prior to use the spectrophotometer was first tested using 100 and 300 nm latex beads. One microlitre of latex beads was added to 3 ml of DMEM, the intensity measured and the solution diluted until it was between 1×10^4 counts/s and 1×10^6 counts/s. Measurement was made at 20.0 °C at an angle of 90 ° over 180 s three times. The viscosity of DMEM was stated as 1.657 centipoise and the refractive index as 1.334. Solutions were measured in the spectrophotometer using at least 600 µl in disposable cuvettes. The latex beads confirmed the spectrophotometer was working correctly; 100 nm latex beads were measured as $102.8 \text{ nm} \pm 8.6 \text{ nm (SD)}$, 300 nm latex beads were measured as $317.4 \text{ nm} \pm 74.5 \text{ nm (SD)}$.

2.4 Statistics

Statistical significance was assigned to $p < 0.05$ and calculated using a two-tailed Student's t-test (paired/unpaired as indicated) for the comparison of two samples. When more than two samples were compared one-way analysis of variance (ANOVA) followed by Bonferroni post-hoc analysis was used. Where indicated, standard deviation (SD) or standard error of the mean (SEM) for data points was calculated and the number (n) of experiments/replicates are given.