

## Abbreviations

**A** - adenine

**Af** - aminofluorescein linker

**Au-Af-DNA** - gold nanoparticles functionalised with the aminofluorescein linker and conjugated to ssDNA

**Au-BHQ-DNA** - gold nanoparticles functionalised with the BHQ linker and conjugated to ssDNA

**Au-F-DNA** - gold nanoparticles functionalised with the fluorescein linker and conjugated to ssDNA

**Au-T-DNA** - gold nanoparticles functionalised with the TAMRA linker and conjugated to ssDNA

**BHQ** - Black Hole Quencher

**BHQ SE** - Black Hole Quencher succinimidyl ester

**BSPP** - bis-(*p*-sulfonatophenyl)-phenylphosphine

**C** - cytosine

**CDMT** - 2-chloro-4, 6-dimethoxy-1, 3, 5-triazine

**CFV** - cresyl fast violet

**CDI** - *N, N'*-carbonyldiimidazole

**CMC** - 1-cyclohexyl-3-(2-morpholinoethyl) carbodiimide

**CTAB** - cetyl trimethyl ammonium bromide

**Cy** - cyanine

**DCC** - *N, N'*-dicyclohexylcarbodiimide

**DCM** - dichloromethane

**DCS** - differential centrifugal sedimentation

**DIC** - *N, N'*-diisopropylcarbodiimide

**DIPEA** - *N, N'*-diisopropylethylamine

**DLS** - dynamic light scattering

**DMAP** - 4-dimethylaminopyridine

**DMF** - *N, N*-dimethylformamide

**DMT MM** - 4-(4, 6-dimethoxy-1, 3, 5-triazin-2-yl)-4-methylmorpholinium chloride

**DNA** - deoxyribonucleic acid

**dsDNA** - double stranded DNA

**DTT** - dithiothreitol

**EDC·HCl** - *N*-(3-dimethylaminopropyl)-*N'*-ethyl carbodiimide hydrochloride

**EDTA** - ethylenediaminetetraacetic acid

**Et<sub>3</sub>N** - triethyl amine

**Et<sub>2</sub>O** - diethyl ether

**EtOAc** - ethyl acetate

**EtOH** - ethanol

**F** - fluorescein linker

**FAM** - carboxyfluorescein

**G** - guanine

**HATU** - *O*-(7-azobenzotriazol-1-yl)-*N, N, N', N'*-tetramethyluronium

**Lys** - lysine

**MeOH** - methanol

**mRNA** - messenger RNA

**MRSA** - methicilin resistant *Staphylococcus aureus*

**NHS** - *N*-hydroxysulfosuccinimide

**NLC** - nuclear localization sequence

**NMM** - *N*-methylmorpholine

**PBS** - phosphate buffer saline

**PCR** - polymerase chain reaction

**PEG** - poly-(ethylene glycol)

**PEG 11** - *O, O'*-Bis-(2-aminopropyl) polypropylene glycol-block-polyethylene glycol-block-polypropylene glycol 500

**PEG 41** - *O, O'*-Bis-(2-aminopropyl) polypropylene glycol-block-polyethylene glycol-block-polypropylene glycol 1900

**RNA** - ribonucleic acid

**SERS** - surface enhanced Raman scattering

**SERRS** - surface enhanced resonance Raman scattering

**ssDNA** - single stranded DNA

**T** - thymine

**T** - TAMRA linker

**TAMRA** - tetramethyl rhodamine

**TAMRA SE** - tetramethyl rhodamine succinimidyl ester

**TBE** - tris borate EDTA buffer

**TFA** - trifluoroacetic acid

**THF** - tetrahydrofuran

**T<sub>m</sub>** - DNA duplex melting temperature

**TLC** - thin layer chromatography

**tRNA** - transfer RNA