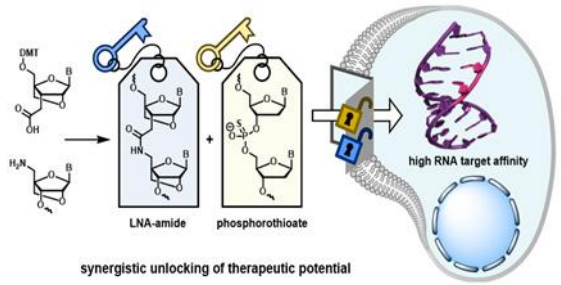
PROJECT NUMBER

14955, 14808, 18633

Increasing the potential of the next generation therapeutic oligonucleotides

Chemical synthesis strategy for increasing the stability and biocompatibility of chemically-synthesised therapeutic oligonucleotides to enable broader medical application of the technology.

Applications: Oligonucleotide chemistry, biopharmaceuticals, molecular diagnostics, biomaterials, RNAi therapeutics



Features	Benefits
Causes more selective and stronger binding to complementary nucleic acids within RNA/DNA complexes -higher target affinity and specificity; Form stable duplexes with RNA, and importantly have selectivity for RNA over DNA	Causes minimal structural deviation to the nucleic acid and increases stability
Less susceptibility to enzymatic degradation than native DNA/RNA; Ability to modulate or eliminate anionic charge on DNA/RNA analogue	Creates more robust, inert and stable DNA or RNA molecules

Features	Benefits
Synthesis by rapid, efficient and scalable solid phase techniques	Well structured manufacture and production processes
Exceptional stability in biological media, and crucially in cell studies; Improves cell uptake of nucleic acids	Highlights the therapeutic potential of the technology to address RNA targets in many diseases
Wide range of applications	Potential applications in oligonucleotide chemistry, biopharmaceuticals chemical biology, nanotechnology, nanomedicine, molecular diagnostics, and biomaterials

To find out more, contact enquiries@innovation.ox.ac.uk and quote the project number.