

Anti-Sense Oligonucleotide Services

Fios Genomics design anti-sense oligonucleotide (ASO) candidates. This service provides efficient, targeted designs for transcript downregulation, translational upregulation, and splice modulation, with considerations for cross-species reactivity and allele-specific targeting.



In Silico Design

The target gene sequence is assessed for possible candidate ASOs, which are scored according to:

- Off-target binding potential
- Presence of toxic motifs
- A self-complementarity score
- Presence of repeated sequences
- Melting temperature
- Thermodynamic binding potential
- GC content



Assessment of Splice Modulation

Our pipeline can be tailored to assess and annotate whether an ASO is able to regulate splicing by targeting splice regulatory motifs.



Cross-Species Comparison

Cross-species comparisons determine if ASOs can target gene orthologs in model species to streamline preclinical testing. Results show overlapping ASO sequences, filtered by match degree between species.



Transcript Downregulation

ASOs that induce endonuclease-mediated transcript downregulation are the most requested design. At Fios Genomics, we provide options for allele-specific targeting, with cross-allele comparisons showing ASO binding affinities to both the healthy and pathogenic alleles.

With just the target gene name and ASO length, we can provide custom bioinformatics services for ASO design.