

ADVANCED TECHNOLOGY FOR SMALL RNA RESEARCH AND OLIGONUCLEOTIDE THERAPEUTICS DEVELOPMENT

Advances in drug development utilizing antisense oligonucleotides (ASOs) and small interfering RNAs (siRNAs) as therapeutic platforms bring promising solutions for various diseases in the field of precision medicine. The ability to visualize the oligonucleotide drug in intact tissues with high sensitivity and specificity is crucial to evaluate their therapeutic safety and efficacy. Introducing the revolutionary new miRNAscope[™] Assay, a highly specific and sensitive *in situ* hybridization assay that enables:

- Evaluation of therapeutic ASO and siRNA delivery, biodistribution, cellular uptake, and persistence over time
- Visualization of small RNA expression in intact tissues or cultured cells at single-cell resolution with spatial and morphological context
- Assessment of RNA-targeted therapeutic efficacy with a high throughput and rapid workflow

The miRNAscope Assay demonstrates exceptional performance for the detection of:

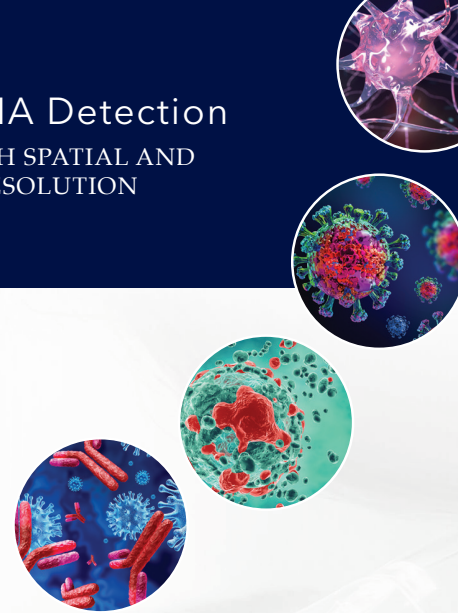
- Antisense oligonucleotides (ASOs)
- Small interfering RNAs (siRNAs)
- microRNAs (miRNAs)
- Small RNA sequences that are 17-50nt in length

miRNAscope ASSAY BENEFITS

- Highly specific and sensitive detection of small RNA molecules
- Spatial context with subcellular resolution
- High signal-to-noise imaging of small RNA targets with ease of interpretation
- Universal assay conditions work for all targets
- IHC compatible for the evaluation of small RNA and protein co-detection
- Available for both automated and manual platforms

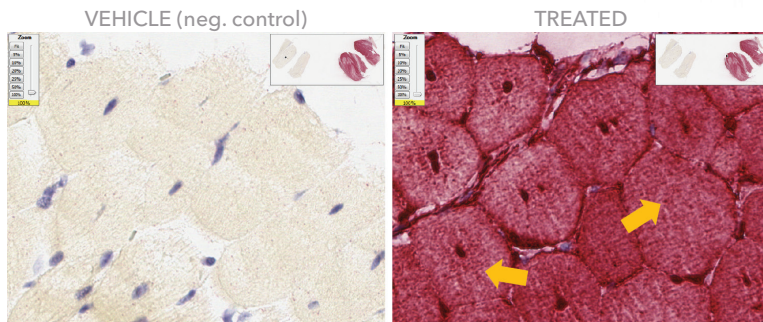
"We had a great experience using miRNAscope in our compound screening efforts. The technique is incredibly specific and the results are very easy to understand. Also, working with ACD's team has been extremely beneficial. They communicated with us during the process to ensure we can get the answers to our questions. They generated impeccable tissue stainings!"

- A Leading BioPharma Company in NY, USA



VISUALIZE SMALL OLIGOS AT THE SINGLE-CELL LEVEL WITH UNMATCHED RESOLUTION

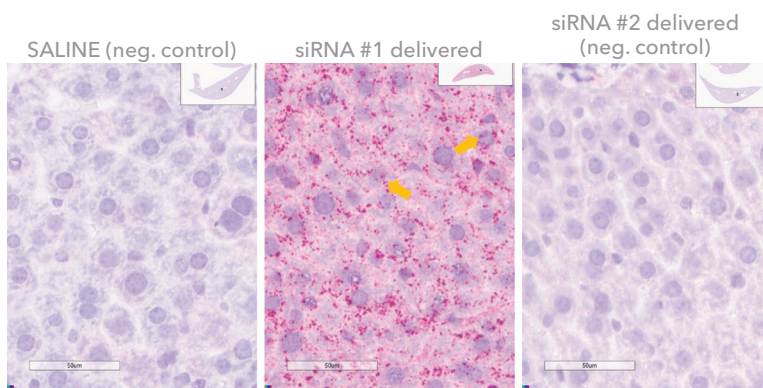
- Evaluate delivery strategies for RNA therapeutics
- Study biodistribution
- Assess efficacy of therapy
- Screen for potential off-target effects



ASO

ASOs are used as therapeutic solutions for modulating disease processes by altering synthesis of a specific protein.

Example detection of ASO target (yellow arrows) in the treated mouse quad muscle tissue samples and not in the vehicle samples indicates successful delivery of ASO therapy.



siRNA

siRNAs are being developed as potential therapeutic agents by silencing specific gene targets.

Example of specific detection of the siRNA#1 probe (yellow arrows) in siRNA#1 treated mouse liver tissue samples only and not in the negative saline nor siRNA#2 treated samples indicates successful delivery of siRNA therapy and specificity of the miRNAscope Assay. Biodistribution of siRNA target is also observed in the siRNA#1 treated samples.

Note: Above tissue slides were counterstained with hematoxylin to provide blue staining of cells.

Need to know your results fast? Outsource your study to the experts in ACD's Pharma Assay Services!

- Leverage PAS's expertise in ASO and siRNA detection across various delivery methods, in different model organisms, and in multiple tissue types
- Rely on PAS's scientific experts for accurate data interpretation
- Receive actionable results within 4-6 weeks

"Our experience working with ACD Bio has been all-around excellent. With their expertise and through clear communication, we developed several assays to detect both RNA and short oligonucleotides in tissue. Compared to standard complementary probes, the signal we obtained using ACD Bio was evident and specific. After seeing the first images, we immediately knew we wanted to use these techniques more frequently."

- Exicure, R&D Team

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