Life Edit Therapeutics – Technology Fact Sheet

Life Edit Therapeutics, an ElevateBio company, is leveraging a proprietary collection of non-pathogenic microbes to discover and develop novel gene editing systems on an innovative, next-generation gene editing platform. With the world's largest and most diverse collection of novel RNA-guided nucleases (RGNs) and base editors under one roof, we provide flexible editing options to advance and develop life-saving therapies by making any edit, anywhere in the genome.

life edit®
an elevatebio company

Life Edit's nucleases: PAM diversity is key

Our lead CRISPR-based RGNs have activities comparable to nucleases from foundational work in the gene editing field. However, they are also smaller in size, allowing for greater versatility in packaging our systems for therapeutic delivery.

The key advantage of our nucleases is their diversity of **protospacer adjacent motifs (PAMs)**, which determine the DNA segments in the genome to which a nuclease can bind.

The PAMs of our four lead gene editing systems are NNNNCC, NNRYA, NNGRR and NNGG.[1]

The diversity of our PAMs enables us to strive towards our mission of rewriting the future by curing disease, making any edit, anywhere. Our nucleases can access virtually any region of the genome, increasing the number of specific sites where therapeutically meaningful edits can be made.

The diversity of PAMs in our lead systems offer unprecedented flexibility across a full spectrum of gene editing modalities:

1 Double-strand breaks (DSBs)

DSBs involve the nuclease cutting both strands of the DNA, enabling gene deletion (knockout) or insertion (knock-in) at the cut site. The PAM diversity of our nucleases allows the introduction of knockout or knock-in edits virtually anywhere in the genome.

2 Base editing

Base editing converts one nucleotide (base) into another, without cutting both strands of DNA. This is achieved by coupling a nuclease, modified to cut only one DNA strand (thus a "nickase"), to a deaminase that edits the target nucleotide. Our modular approach to base editing couples our lead nucleases to one of our proprietary deaminases: a C-to-T deaminase or an A-to-G deaminase.

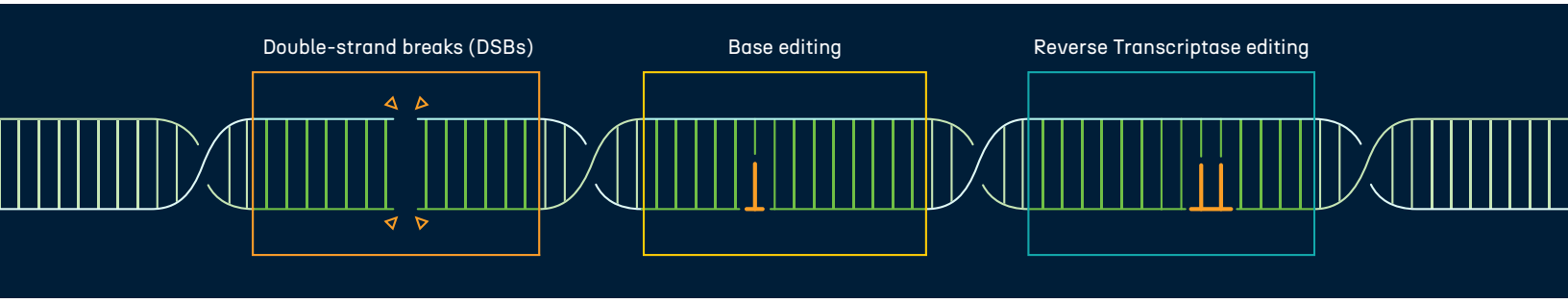
The PAM diversity of our nucleases addresses a critical base editing parameter: the target mutation must fall within a certain window of the nuclease's PAM. Our PAM diversity enables base editing at more sites than any one nuclease could access.

3 Reverse Transcriptase editing

Reverse transcriptase (RT) editing, also known as prime editing, involves cutting one DNA strand, then replacing, adding to, or deleting a genomic sequence with a new sequence that is encoded by the guide RNA (gRNA). Our approach takes advantage of our panel of RGNs to enable optimal editing of the target locus.

Life Edit's platform can support RT editing in three ways:

1. PAM diversity that positions the nuclease as close to the editing site as possible, reducing the size of the required gRNA and the concomitant challenges / costs of synthesizing lengthy gRNAs
2. Proprietary technology for engineering and designing gRNAs
3. Expertise in target screening, analysis, and optimization



[1] where R is A or G, Y is C or T, and N is any DNA nucleotide