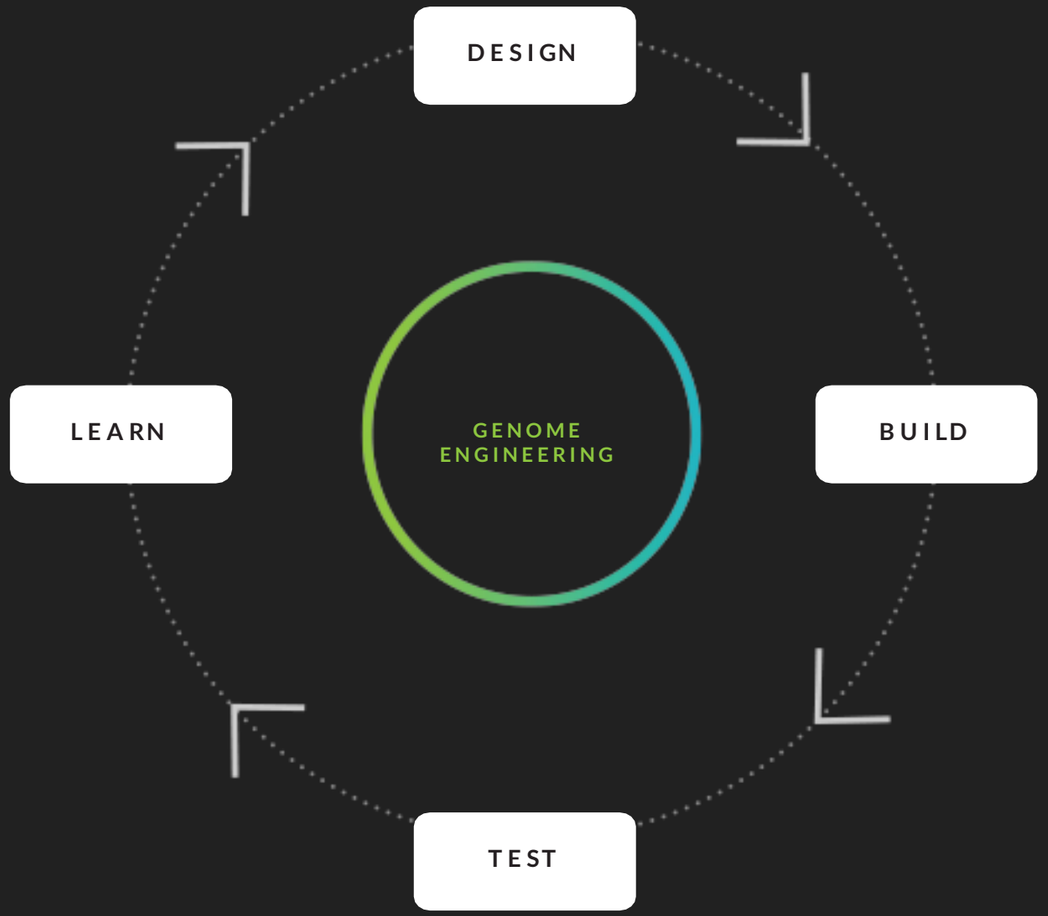
SYNTHEGO

NIST Genome Editing Workshop
April 23, 2018

Synthego: Engineering Design Thinking Meets Biology

Parallelism
Rapid Iteration
Scalability
Automation



Hardware
Bioinformatics
Chemistry
Biology

- Based in San Francisco Bay Area
- Venture funded
- Advisory Board: Jennifer Doudna, Andrew Witty

SYNTHEGO

Good data comes from good inputs.

Biology is Becoming a Data Science

Genome Engineering, Multi-Omics and AI are changing the landscape of Discovery and Development

Total Number of Human Genomes Sequenced Estimated to Double Every Year
In a Few Years Genomics Data Generation Will Rival YouTube

-PLOS

Automated Smart Factory

World's first high-throughput biopolymer factory for CRISPR guide production

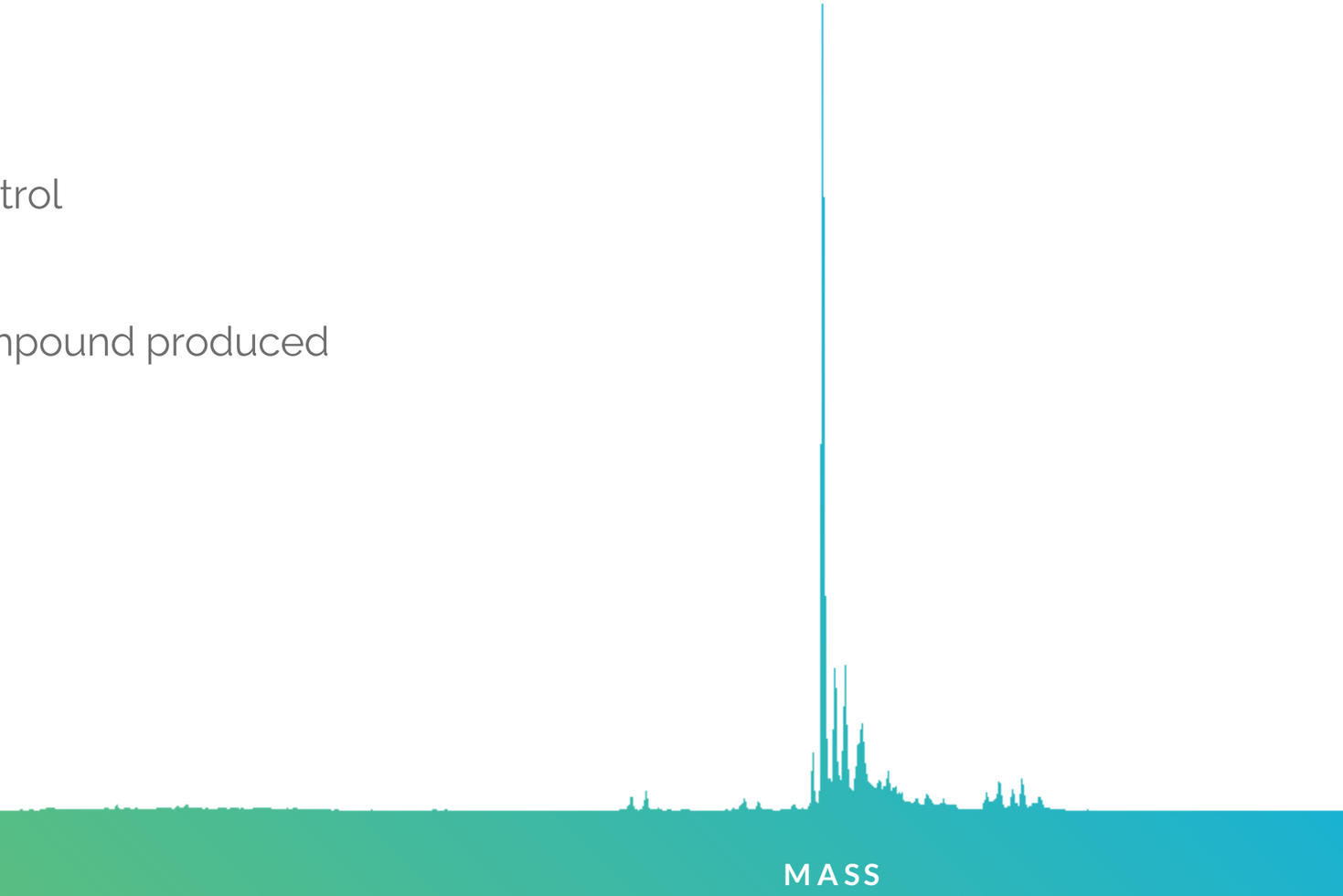
Proprietary innovations in microfluidics, chemistry, software and automation

Allows for synthesis accuracy through process control

Focus on Quality

Automated, multi-parameter quality control
(for research grade)

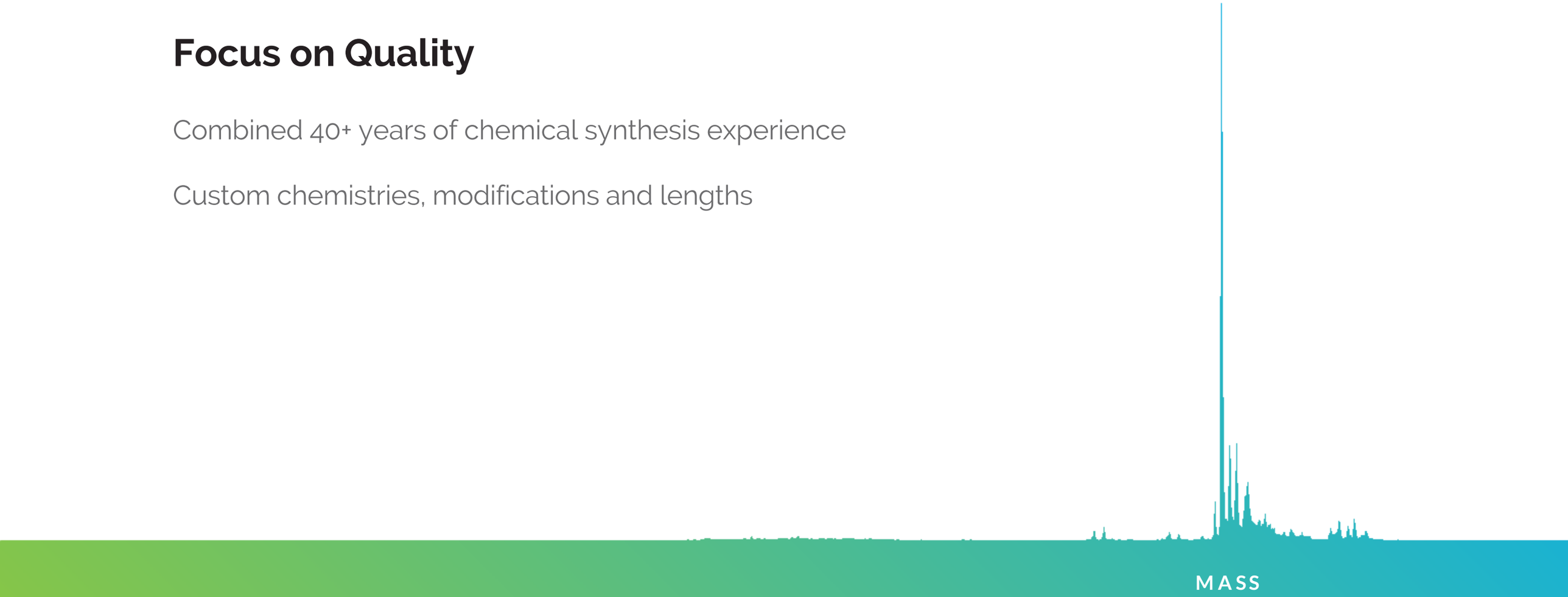
Thorough investigation of each RNA compound produced



Focus on Quality

Combined 40+ years of chemical synthesis experience

Custom chemistries, modifications and lengths



Extended single guide synthesis

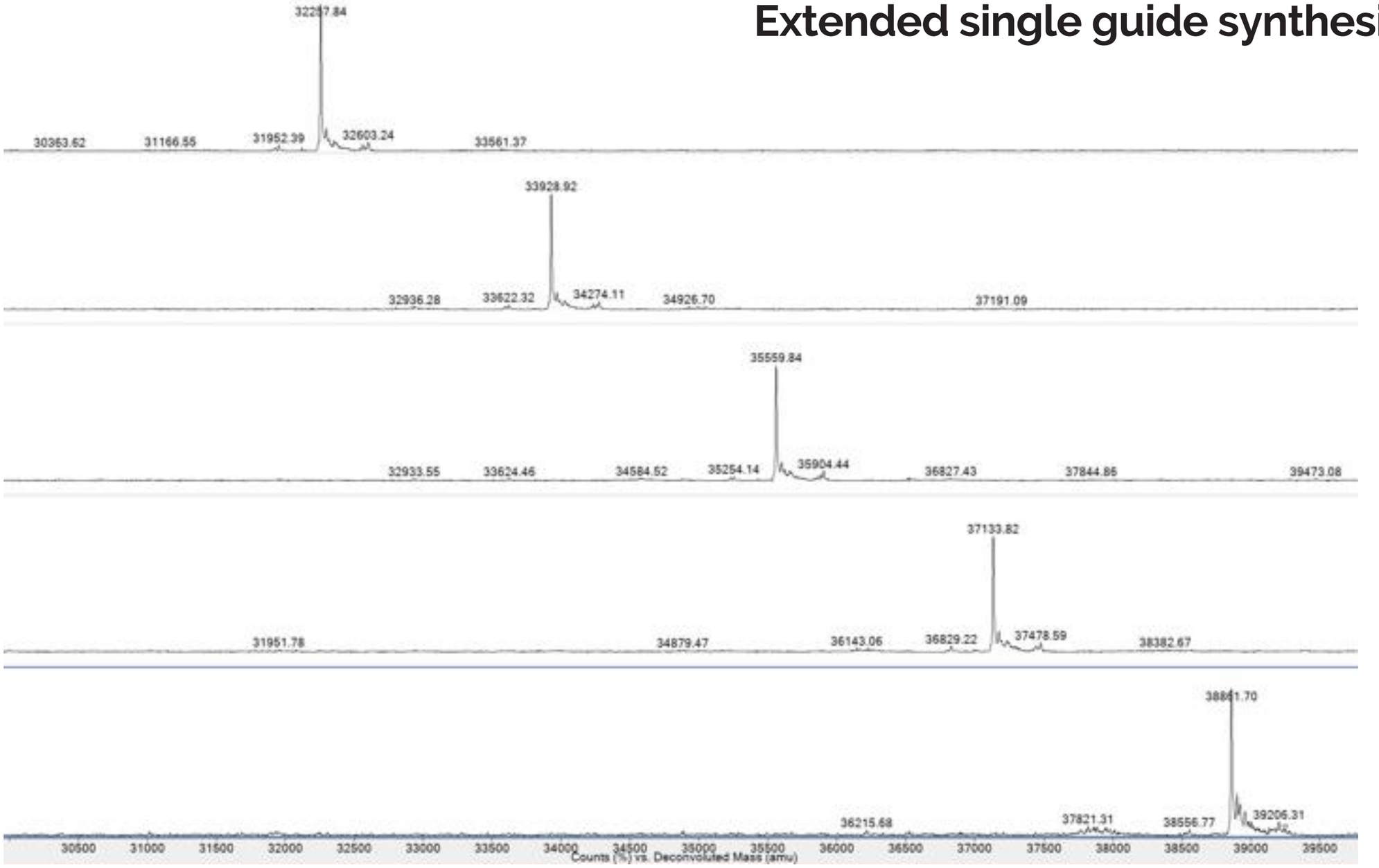
100mer

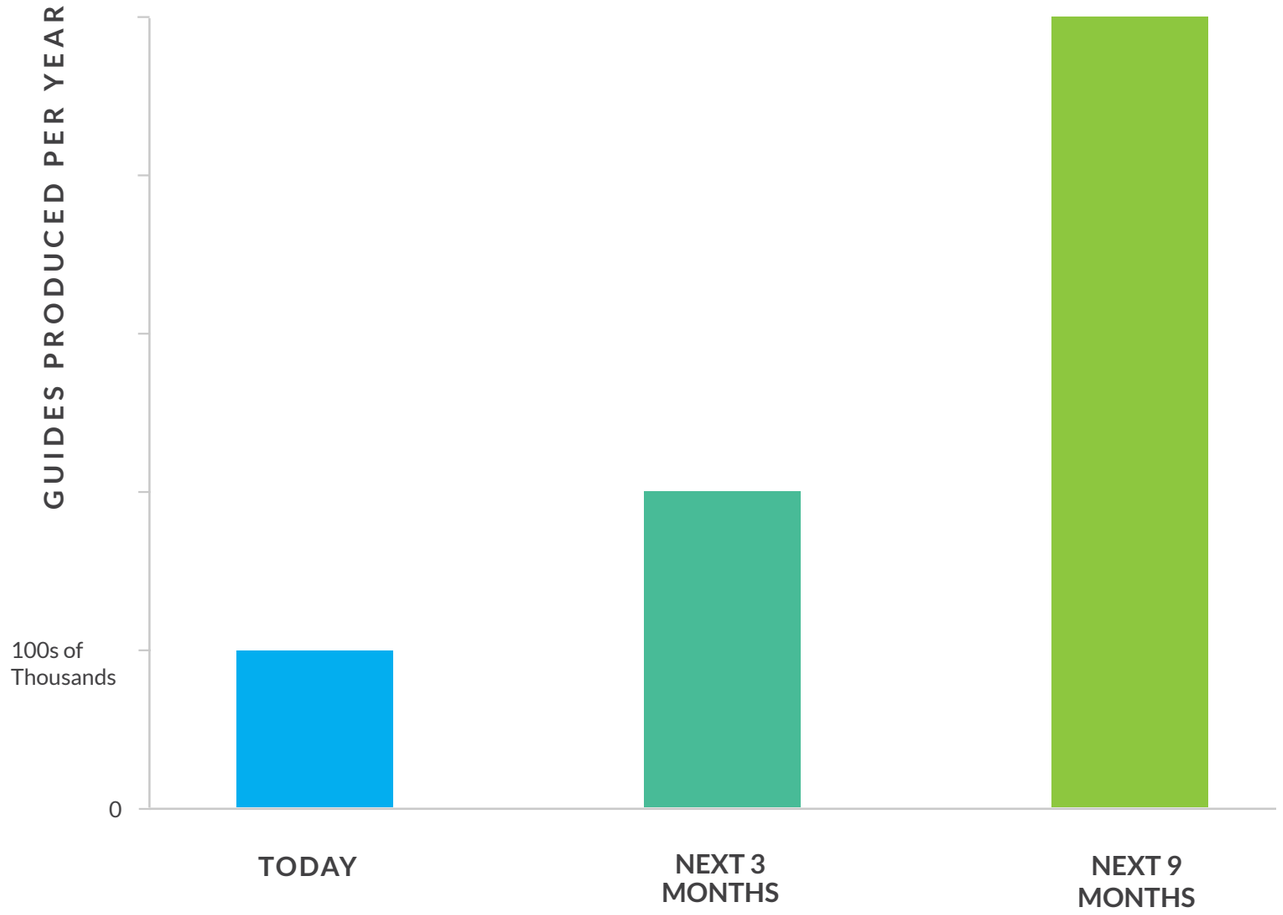
105mer

110mer

115mer

120mer





Factory Capacity

Tens of Thousands of unique guides in past year

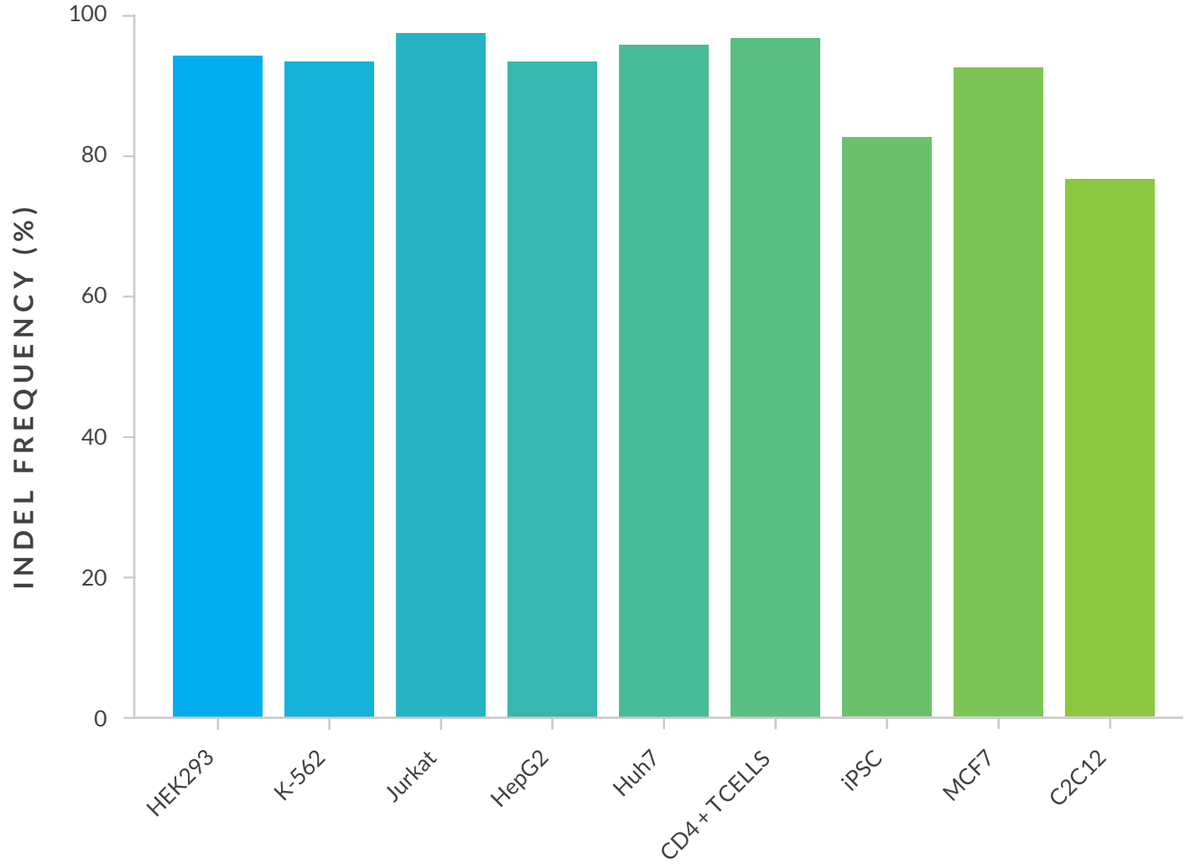
Individual or Library formatting

Microgram to Gram scales

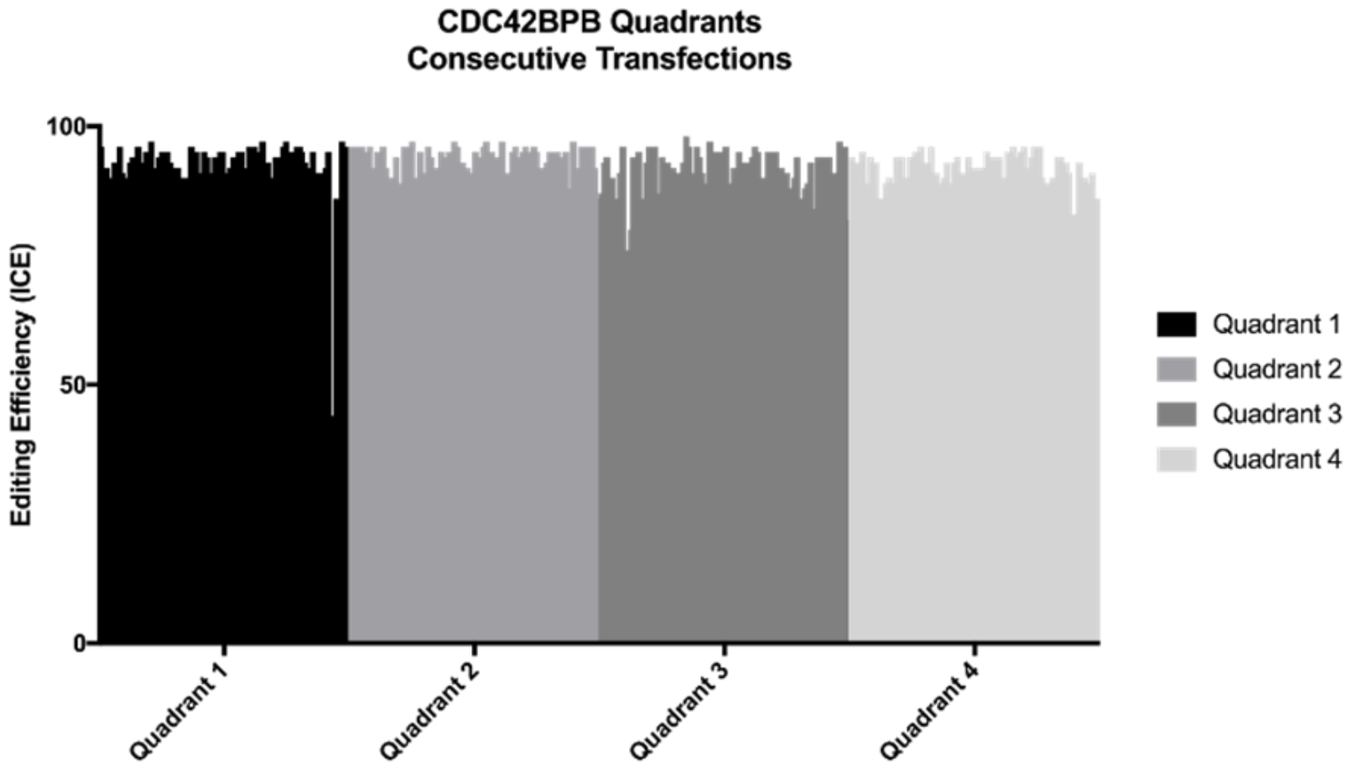
ISO pipeline in progress

Pathway to GMP

High Quality CRISPR inputs allow editing of many cell types



Highly reproducible CRISPR inputs allow us to standardize editing in many cell types, automate workflows and generate large data sets we can trust



Building Better Predictive Models with Better Data

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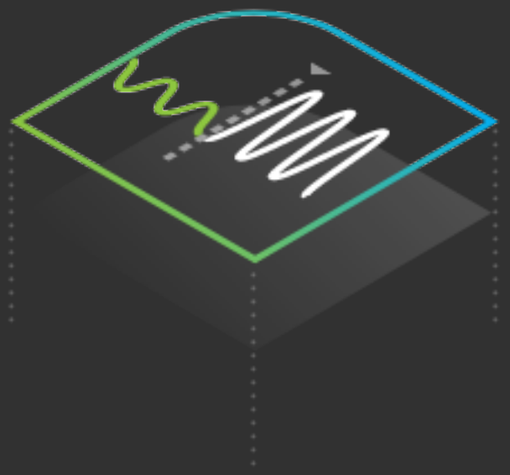
Synthego ICE



- SUPPORTS COMPLEX REPAIRS
- FREE AND FAST BATCH ANALYSIS
- PARITY WITH NGS
- OPEN SOURCE

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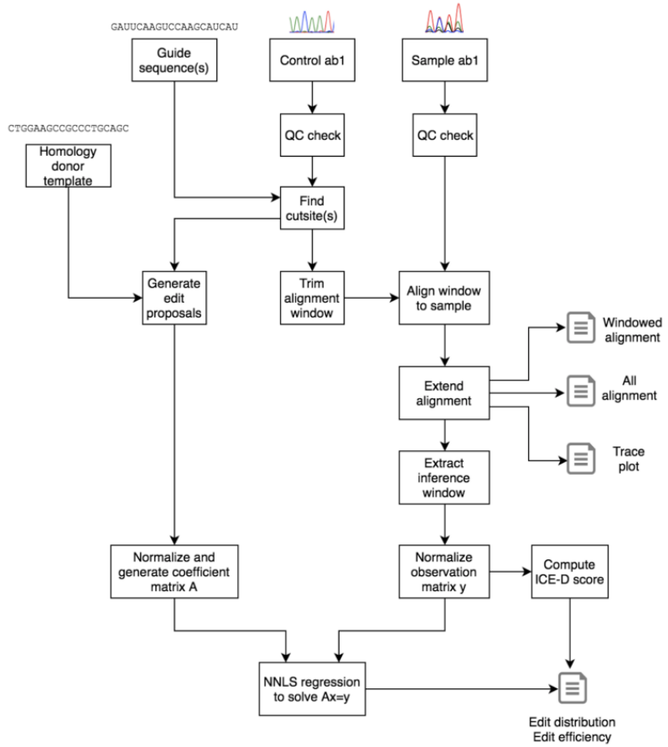
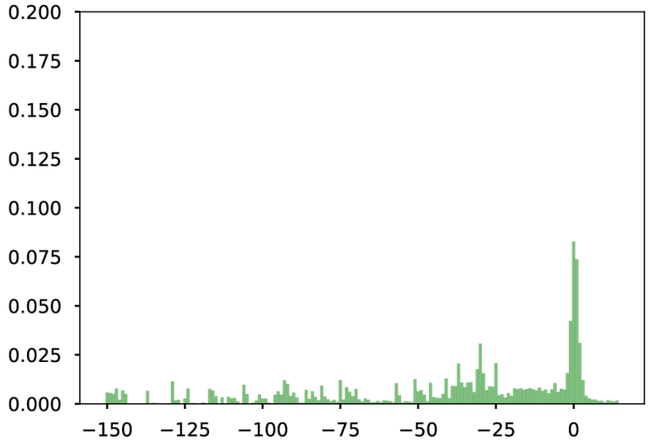
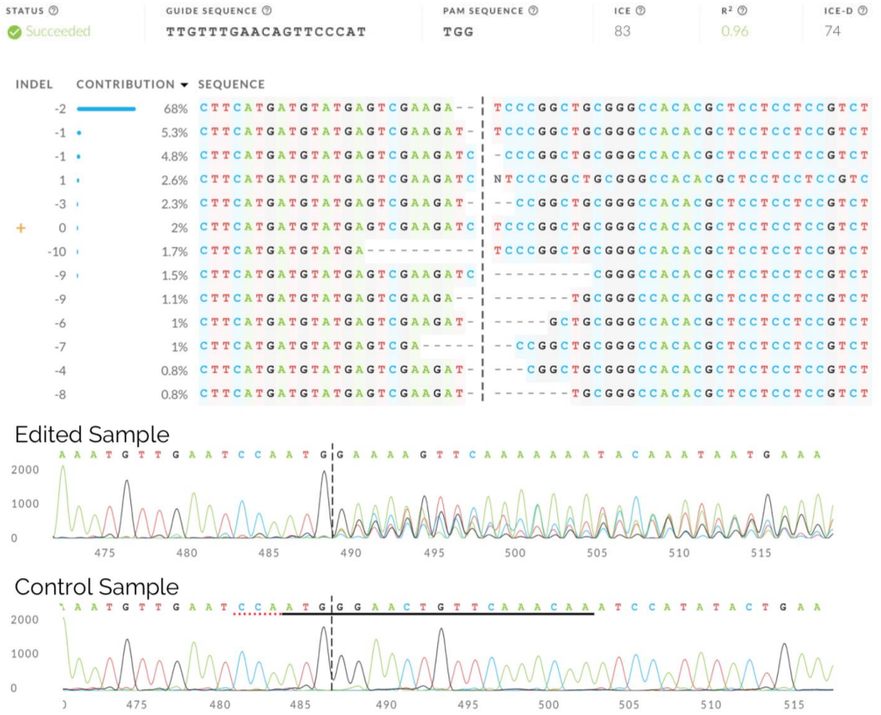
ICE and ICE-D Algorithms



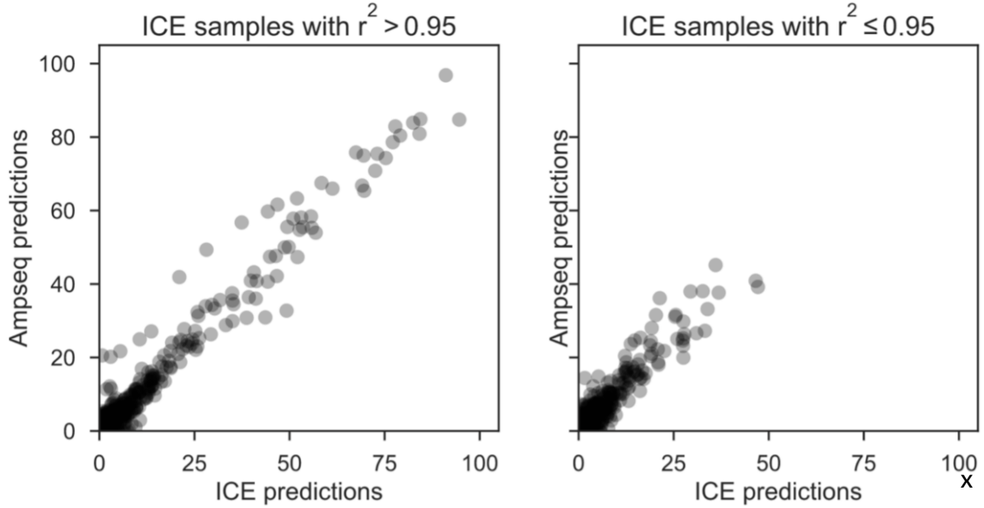
SUPPORT FOR LARGE DELETIONS



DETAILED VISUALIZATIONS



COMPARED AGAINST NGS



Thank you
for listening.

We at Synthego are excited to work with you.

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