# Corporate Presentation

May 2025

CODEXIS®

# Forward Looking Statements

These slides contain forward-looking statements that involve risks and uncertainties. These statements relate to future events or our future financial or operational performance and involve known and unknown risks, uncertainties and other factors that could cause our actual results or levels of activity, performance or achievement to differ materially from those expressed or implied by these forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “aim,” “assume,” “contemplate,” “continue,” “design,” “due,” “goal,” “intend,” “positioned,” “seek,” “target,” “on track,” “may,” “will,” “should,” “could,” “would,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “project,” “predict,” “potential” or the negative of these terms, and similar expressions and comparable terminology intended to identify forward-looking statements. In addition, forward-looking statements include all statements that are not historical facts including, but not limited to, our expectations regarding the potential revenues of Codexis’ Pharmaceutical BioCatalysis business; potential details and features of the ECO Synthesis™ platform such as it being scalable and able to reduce waste, as well as having higher purity, quality and better unit economics than existing methods, and whether it can obviate the need for massive early stage investment required for phosphoramidite chemistry; the level of future demand for RNAi therapeutics and estimated infrastructure investment required to meet such future demand; the future ECO Synthesis™ market opportunity, including statements regarding its potential demand, whether and to what extent Codexis is able to capture market share and how many customers will sign revenue generating contracts; Codexis' potential revenue from such market opportunity, and Codexis’ ability to achieve pilot scale production with the Innovation lab, to engage with GMP scale-up partners, and to secure raw material supply; potential customer uptake and revenue opportunities of Codexis’ RNA ligase program, and the potential cost savings and yield improvements generated from the company’s RNA ligases; Codexis’ considerations for the build-out of a GMP lab, and associated potential revenue stream; timing of news updates regarding the ECO Synthesis™ platform and Codexis’ achievement of key milestones; and Codexis’ expectations regarding ability to and timing around reaching profitability. These forward-looking statements represent our estimates and assumptions only as of the date hereof, and, except as required by law, Codexis undertakes no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

Actual results could differ materially from Codexis' current expectations for a variety of reasons, including due to the factors set forth in Codexis’ most recently filed periodic report, including under the caption “Risk Factors,” and Codexis’ other current and periodic reports filed with the Securities and Exchange Commission (SEC). If any of these risks or uncertainties materialize, or if Codexis’ underlying assumptions prove to be incorrect, actual results or levels of activity, performance or achievement, or any of the foregoing forward-looking statements, may vary significantly from what Codexis projected.





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# **Codexis:** Enabling the Manufacture of Complex Therapeutics

## CodeEvolver® Platform Delivers Scalable and Sustainable Enzymatic Solutions

### Revenue-Generating Pharma BioCatalysis Solutions

- Foundational business in small molecule manufacturing and other customized applications
- Increasingly positive cash contribution driven by ramp-up in newer, higher-margin products

### RNA Manufacturing Solutions

- **ECO Synthesis™ toolbox:** enzymatic synthesis to meet future demand for RNAi therapeutics
  - → Double-stranded RNA ligase solutions
  - → Complete enzymatic synthesis solutions
- **Codex® HiCap RNA Polymerase:** global exclusive license to aldevron®

**$60 Million** Cash / Cash Equivalents and Investments as of 3/31/25

Path to Cash Flow Positivity By End of 2026



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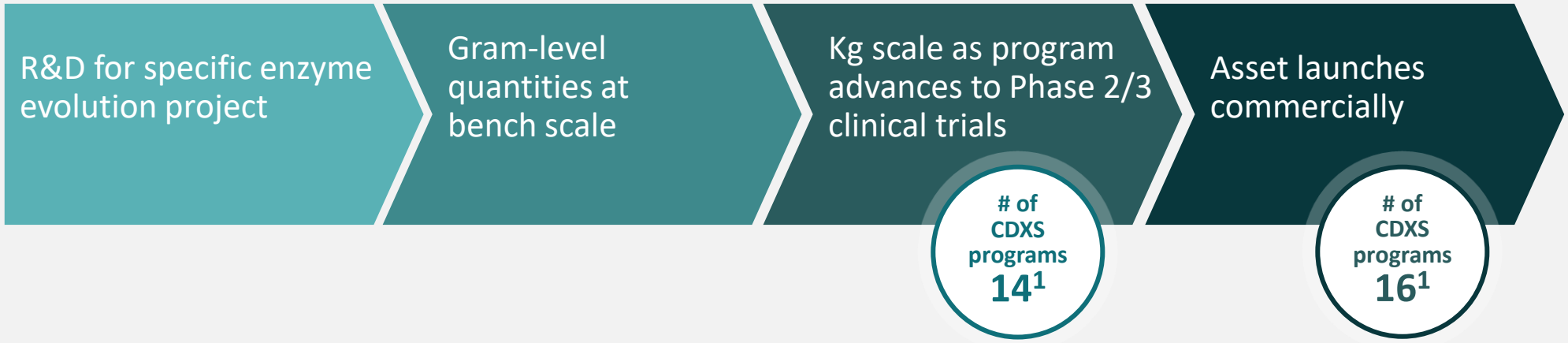
# Revenue Generating Pharma BioCatalysis Solutions

## Two Paths to Revenue

**1** **“Off-the-shelf” Enzyme Solutions from Existing Libraries**

**2** **Custom Enzyme Evolution**




**Strong Customer Engagement; Pipeline of Higher Margin Products Maturing Through 2030**



[1] Number of programs for which Codexis is selling biocatalysts to pharmaceutical manufacturers as of December 31, 2024

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# RNA Manufacturing Solutions: ECO Synthesis Toolbox

## Proprietary Platform Enables Enzymatic Synthesis of RNAi Therapeutics

### ECO Synthesis Toolbox

**Ligation**
Double-Stranded RNA (dsRNA) Ligase Program

**Core Technology**
Sequential Incorporation of Modified Building Blocks

**Raw Materials**
NQPs & Starter Oligo

**Conjugation**
Incorporation of Targeting Moieties

### The Product

siRNA[1]

### Associated Revenue Streams

- Customized dsRNA ligases
- siRNA production
  - Process development fees
  - GLP material
  - GMP scale-up partnerships (milestones, royalties, raw materials sales)
  - GMP material from future CDXS facility

[1] Image from Codexis demonstration of gram-scale synthesis in December 2023



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# RNA Therapeutics: a Growing Modality

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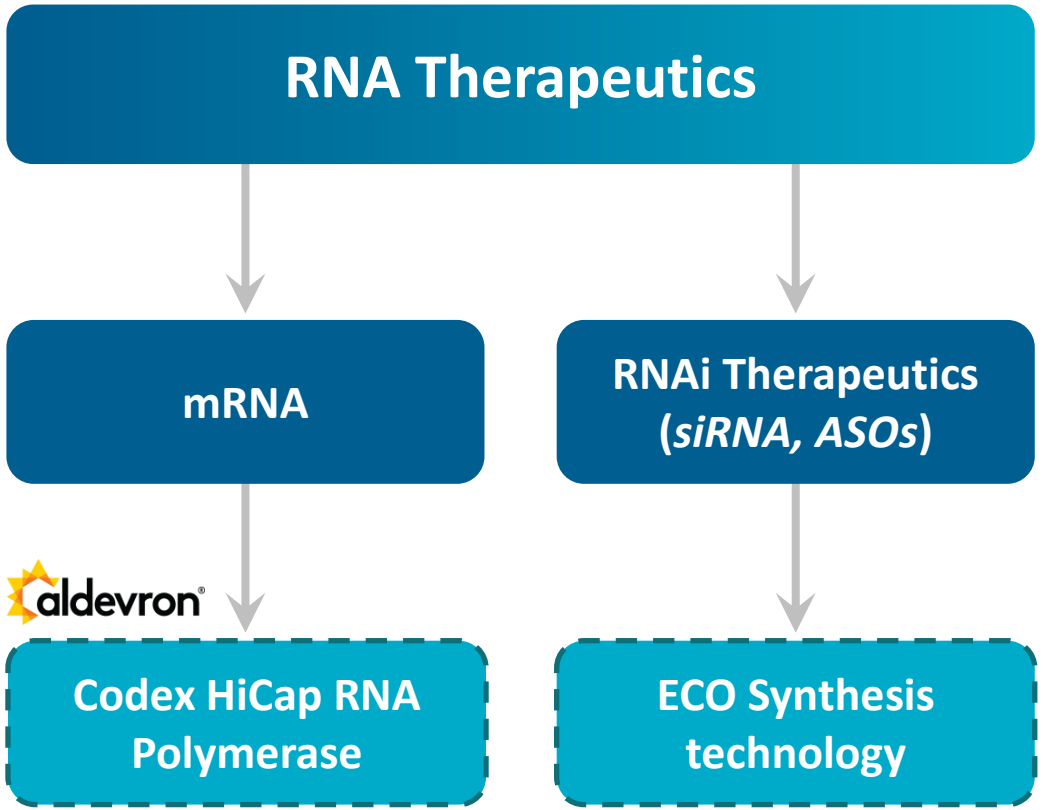
# RNA Therapeutics Overview




## siRNA: Natural Entry Point for ECO Synthesis Technology

- Short, double-stranded oligonucleotides
- Selective knock-down of disease-related genes via sequence-specific mRNA degradation
- Potential application in additional large disease indications
- Currently manufactured using phosphoramidite chemistry



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# Key Benefits of siRNA Therapies

## Improved Patient Compliance

- Durable therapeutic efficacy – sustained effect for 6+ months vs. daily dosing
- In-office administration supports better patient adherence
- Consistent therapeutic efficacy across patient populations minimizes unwanted side effects

## Targeted Gene Silencing

- Acts at genetic level to avoid off-target interactions
- Minimizes need for dose re-optimization
- Bypasses liver metabolism to reduce risk of drug resistance and drug-drug interactions

## Potential to Treat Previously Untreatable Diseases

- Expands druggable universe by acting on mRNA vs. protein (small molecule APIs)
- Genetic precision and control offer potential to treat a wide range of conditions

# 7 Approved siRNA Therapies Across Multiple Indications Today

**Patisiran (2018)**
Rare orphan indication
*Population: Hundreds of Thousands*

**Givosiran (2019)**
Rare orphan indication
*Population: Hundreds of Thousands*

**Lumasiran (2020)**
Rare orphan indication
*Population: Tens of Thousands*

**Inclisiran (2021)**
Hypercholesterolemia
*Population: Tens of Millions*

**Vutrisiran (2022)**
Rare orphan indications
*Population: Hundreds of Thousands*

**Nedosiran (2023)**
Rare orphan indication
*Population: Tens of Thousands*

**Fitusiran (2025)**
Rare orphan indications
*Population: Tens of Thousands*

First siRNA drug approved for use in a **large indication**

**Label expansion** for additional population sub-group in March 2025



Source: Codexis Market Research

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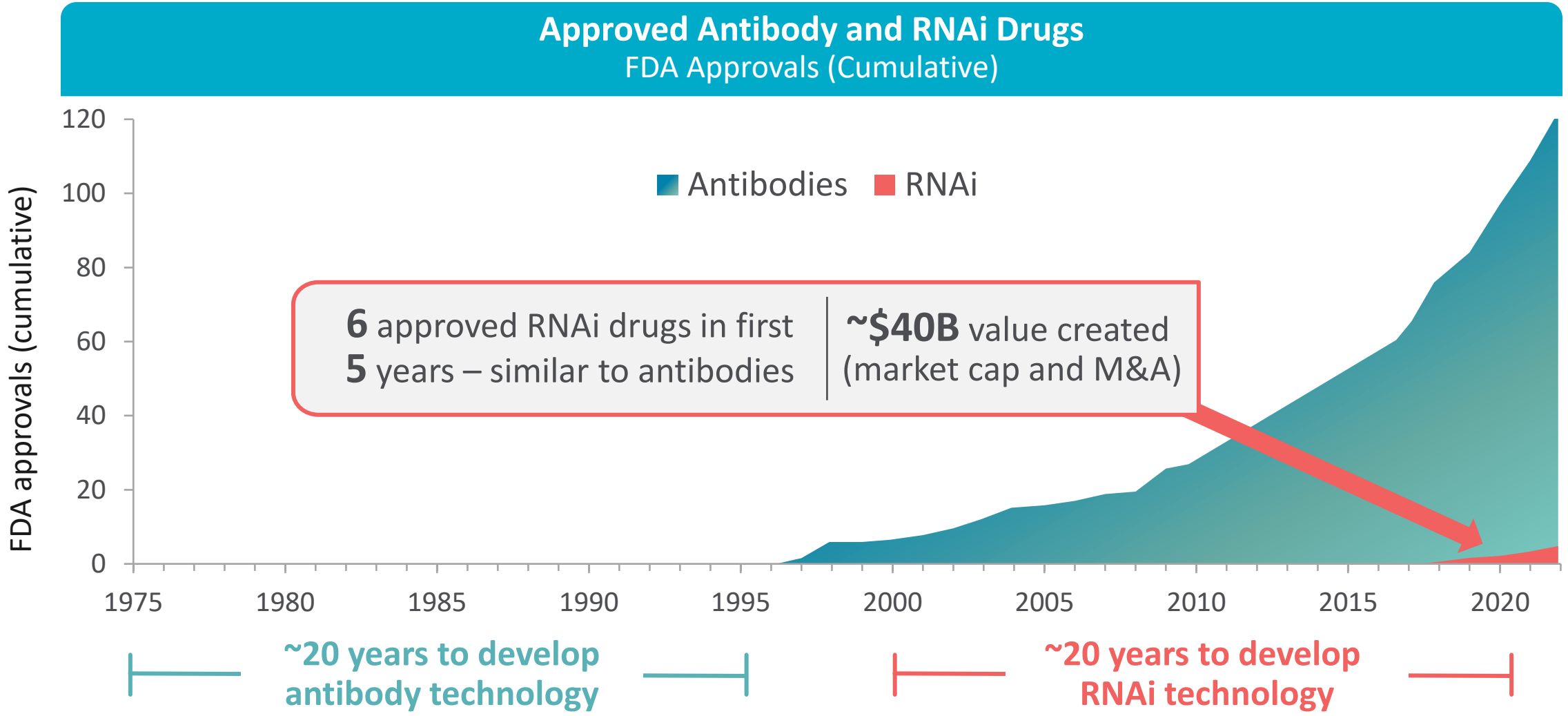
# RNAi Therapeutics – the Next Therapeutic Wave




Source: Codexis December 2023 KOL Event



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# Challenges in RNA Manufacturing

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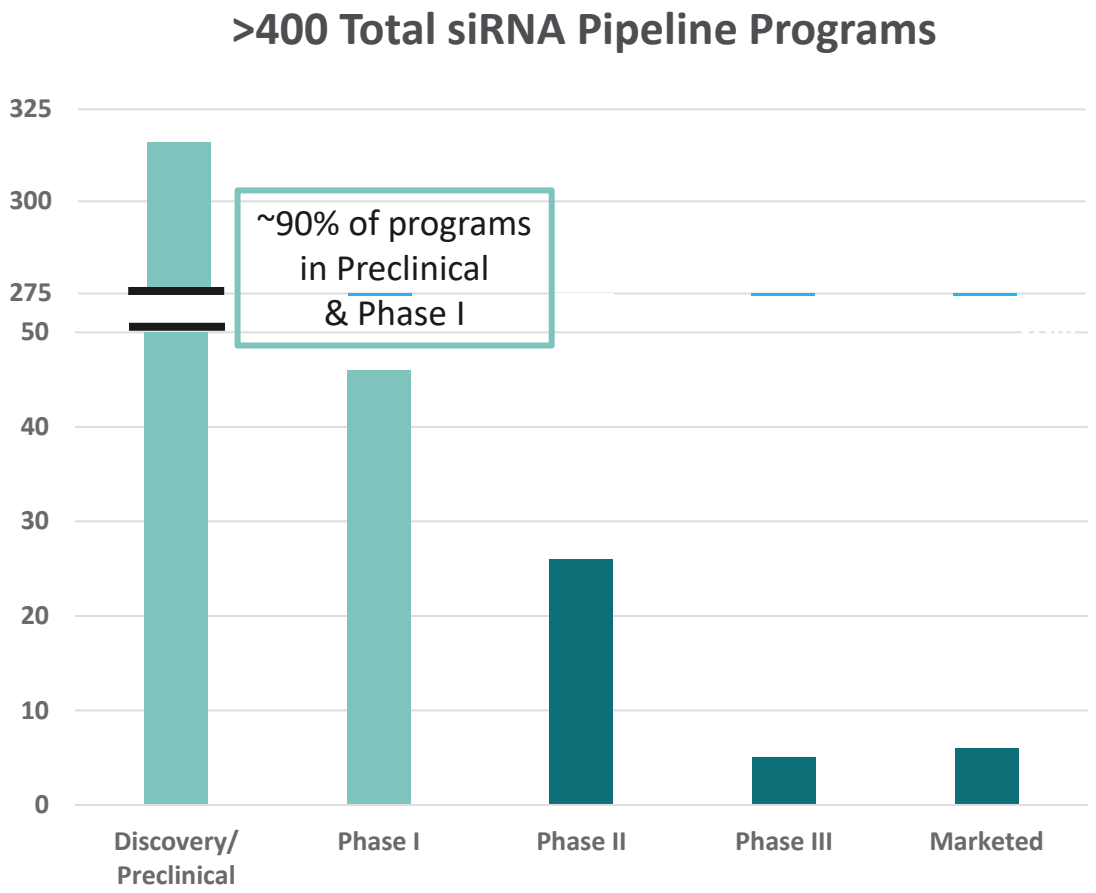
# Majority of the siRNA Asset Pipeline is Early Stage




## Key Disease Areas in Clinical Development

- Cardiovascular
- Cancer
- Infectious Disease
- Endocrine
- Central Nervous System
- Ocular

**Expected Demand for RNAi Therapeutics is on Track to Exceed Today's Manufacturing Capacity**



Source: Oct 2024 Cortellis, Global Data, Evaluate Pharma; Codexis Market Research

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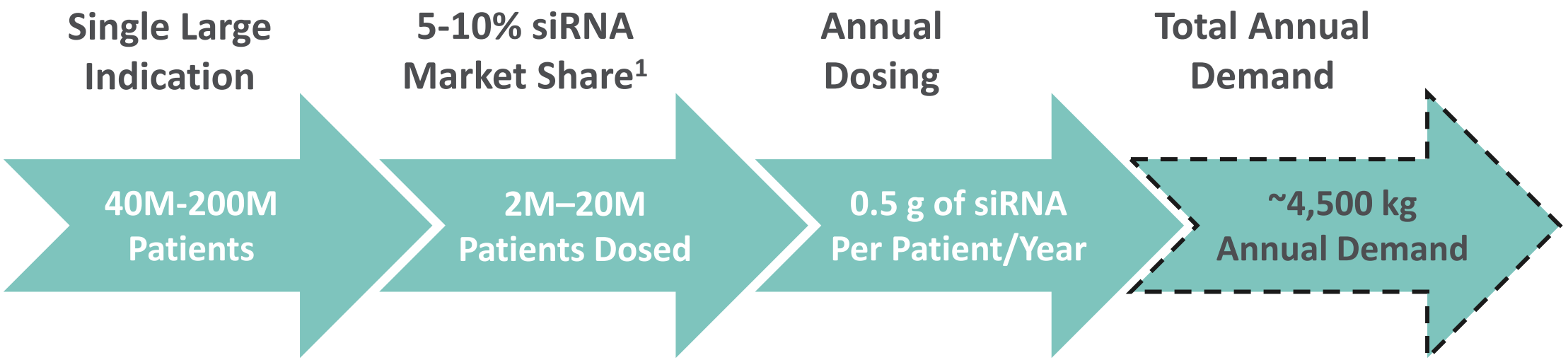
# Case Study: siRNA Demand for a Large Patient Indication

## A Single Large Indication siRNA Asset can Translate into 1K+ kg of Annual Demand




Traditional Phosphoramidite Chemistry Cannot Efficiently Scale to Meet that Demand



[1]Source: Evaluate Pharma (does not include label expansions)
https://www.bioprocessintl.com/therapeutic-class/novartis-talks-leqvio-manufacturing-approach-at-tides-europe

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# CapEx to Meet Anticipated Demand via Chemical Synthesis is Prohibitively High

**CapEx Required using Chemical Synthesis**

$725M = 1K kg of RNAi/year

$7.25B = 10K kg of RNAi/year
(1-2 large indication assets)

$15B = 20K kg of RNAi/year
(3-4 large indication assets)

## Real World Example: Agilent

- Agilent invested **$725M** in facility expansion[1] to produce up to **1K kg of RNAi per year**
- **$10B to $20B** infrastructure investment required to meet anticipated annual demand of **~30K kg by ~2030**

Source: Codexis Market Research 2023
[1]Agilent press release



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# Additional Limitations of Traditional Chemical Synthesis

| | |
|---|---|
| **Limited Scalability** | • Current batch size limited to approximately 5-10 kg<br>• Bottlenecks for development-stage assets |
| **Toxic Solvent Use** | • 1K kg of siRNA = 3K kg of toxic and flammable solvent use<br>• Produces millions of liters of costly, harmful chemical waste |
| **Lower Batch Yield & Purity** | • Inefficient for longer siRNAs<br>• ~70% purity for oligos >12 nucleotides |
| **Ex-U.S. Manufacturing Infrastructure** | • Largely reliant on foreign suppliers of raw materials<br>• Prohibitively high CapEx to onshore manufacturing to the U.S. |



Source: Codexis Market Research

# RNA Manufacturing Solutions:
# ECO Synthesis Toolbox

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# ECO Synthesis Toolbox: Today's Status

## 2025 is About Shifting from the Development Stage to Commercial Execution

- ✓ Delivered proof-of-concept for our scalable, enzymatic manufacturing solution
- ✓ Completed construction of ECO Synthesis Innovation Lab to supply GLP-grade material
- ✓ Signed first revenue-generating contract for ECO Synthesis manufacturing services

- ▶▶ First-mover advantage in enzymatic synthesis of siRNA therapeutics
- ▶▶ Well positioned to grow with clients as their pipelines of siRNA drugs get approved



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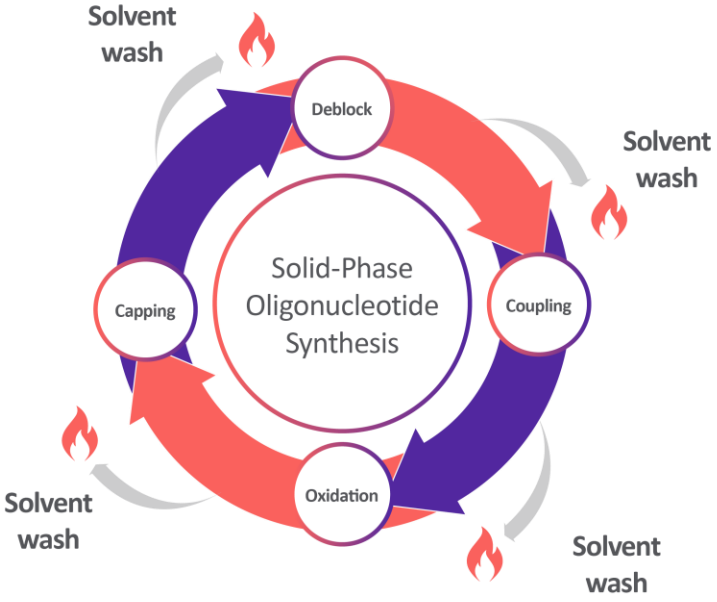
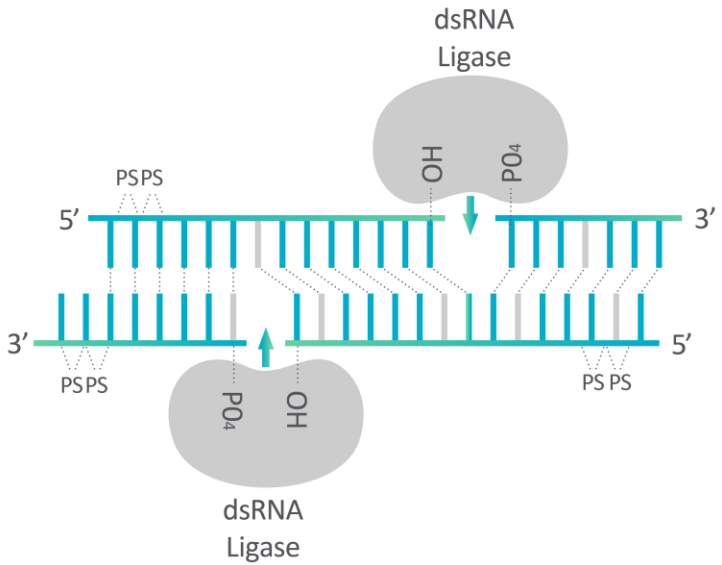
# Enzymatic Solutions Provide Optionality in siRNA Synthesis

## ECO Synthesis Toolbox

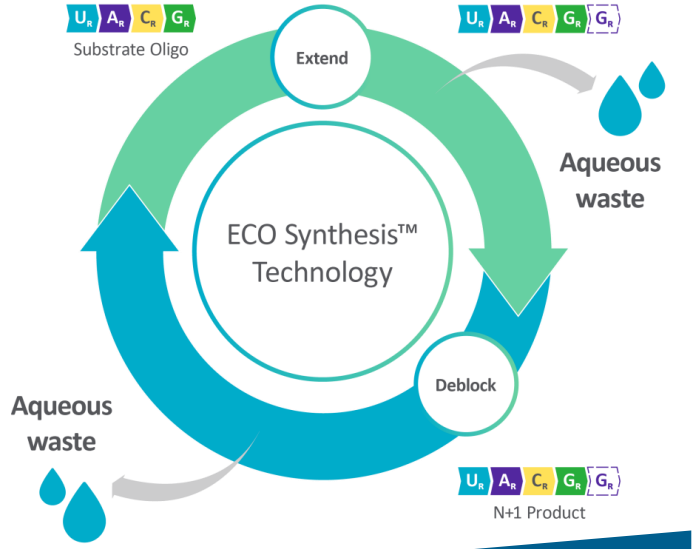
### Chemical




### Hybrid




### Enzymatic




**Traditional siRNA Synthesis Using Phosphoramidite Chemistry**

**Fragments + Ligation**

**Complete Enzymatic Synthesis**



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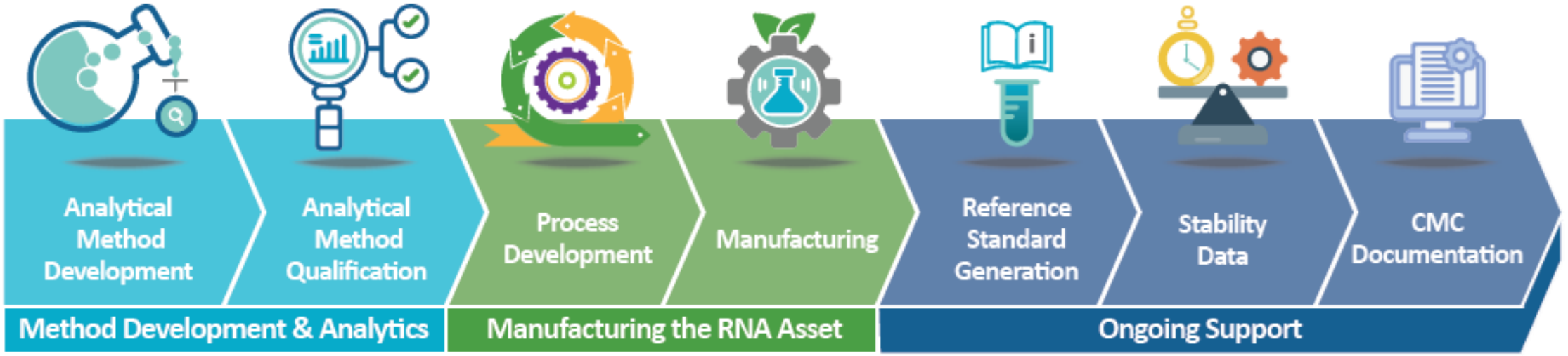
# ECO Synthesis Toolbox: Broad Portfolio of Enzymatic Capabilities

## Solutions Designed to Service Both Large and Small siRNA Drug Innovators




Codexis Solutions are Poised to Capture a Large Proportion of siRNA Assets in Development Today



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# ECO Synthesis vs. Traditional Chemistry: Potential Impact

| | Phosphoramidite Chemistry | ECO Synthesis Platform | Potential Impact |
|---|---|---|---|
| **Maximum Synthesis Batch Size (kg)** | ~5-10 kg | ~25-50 kg | **5x +** bigger |
| **Production Time (months)** | ~12-22 *months* | ~6-11 *months* | **50%** faster |
| **CapEx Required (millions)** | ~$500-700M | ~$150-210M | **70%** cheaper |

Codexis modeling and calculations based on:

1. 2 trains running 24/7 and using 80 cm synthesis columns (1.8 mol) for PAC; ECO uses 80 cm column with higher bed height
2. Phosphoramidite chemistry (SPOS) yield: 3.5-4 g/mmol, ECO Synthesis™ yield: 4-5 g/mmol
3. Final process conditions for ECO Synthesis™ still under development
4. Phosphoramidite chemistry CapEx estimate from Agilent facility investment



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# ECO Synthesis Toolbox:
# Double-Stranded RNA Ligase Solutions

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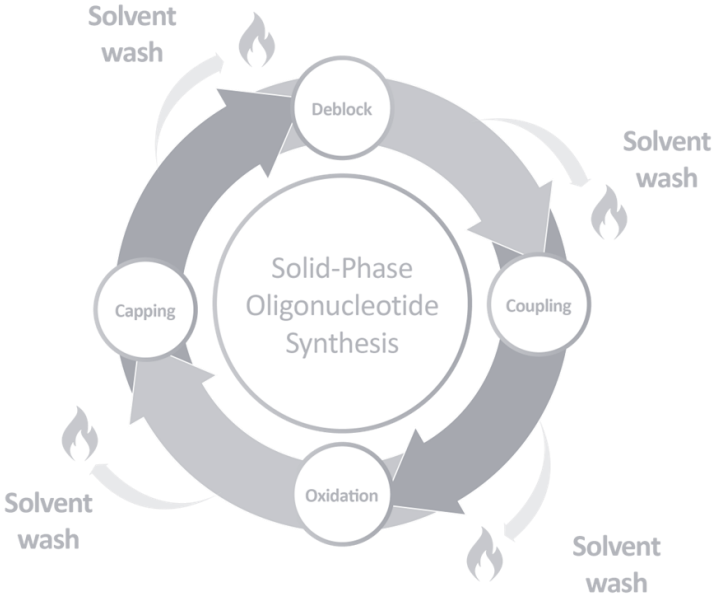
# Hybrid dsRNA Ligase Approach: Near Term Revenues

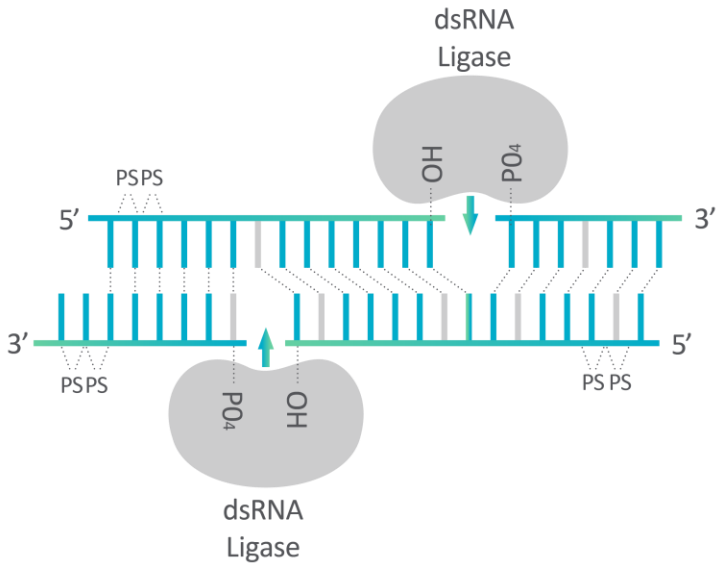
## ECO Synthesis Toolbox

### Chemical



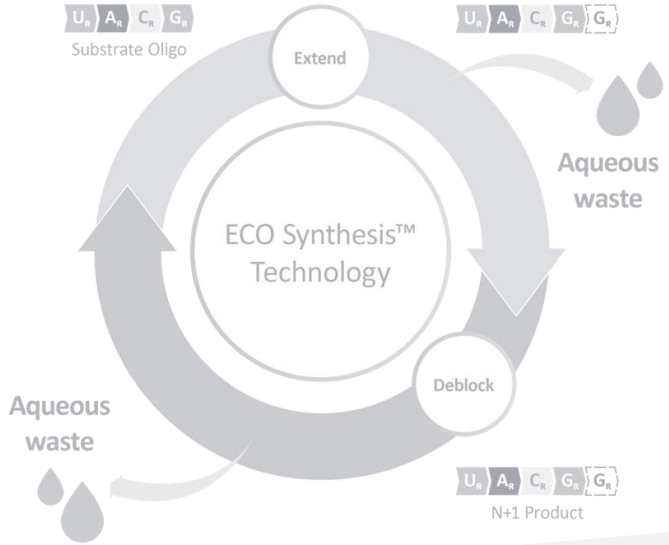

Traditional siRNA Synthesis Using Phosphoramidite Chemistry

### Hybrid




**Fragments + Ligation**

### Enzymatic




Complete Enzymatic Synthesis



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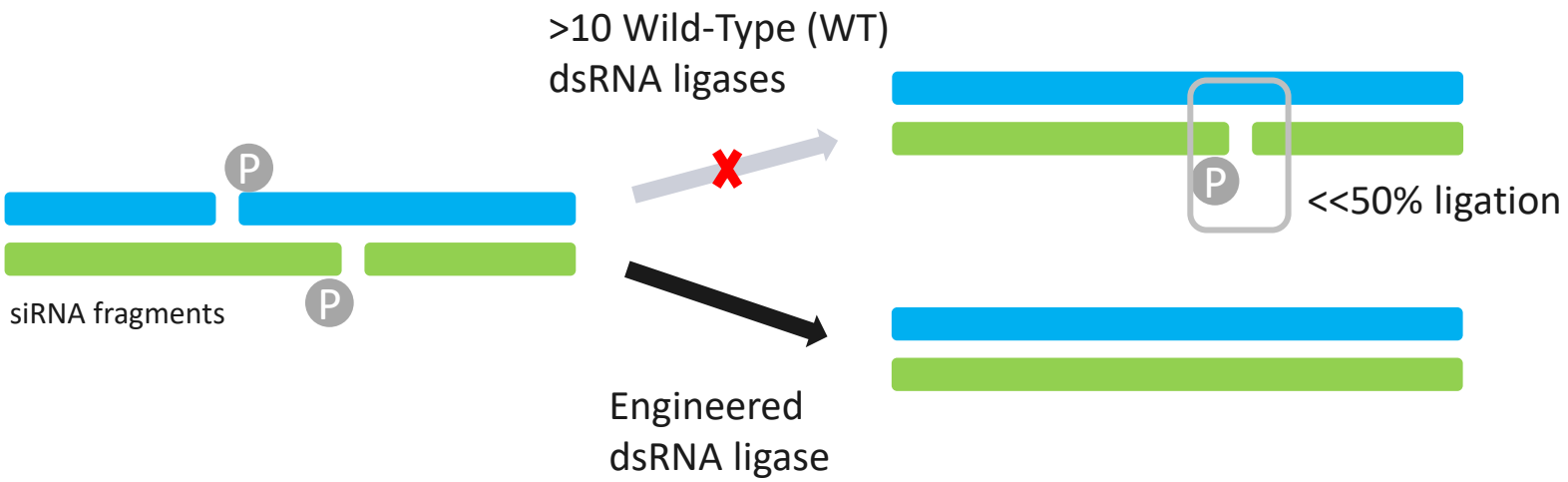
# Codexis' Engineered dsRNA Ligases Enable Higher Purity and Lower Manufacturing Costs

- **Using chemical synthesis, purity and yield go down with longer siRNA strands**
- **dsRNA ligases enable shorter fragments to be stitched together into a full-length siRNA**

  → Reduces costs and improves purity and yield
- **Codexis ligases dramatically outperform wild-type ligases**




WT ligases do not efficiently convert all nicks in a given substrate

Codexis engineered ligases achieve **target conversion (>90%) for *all* nicks** in substrate design



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# dsRNA Ligase Solutions: Multi-Pronged Commercial Strategy

## Variety of Approaches to Meet Customers Where They Are

### dsRNA Ligase Screening & Optimization Services

- Leverages deep library of existing ligase variants
- Drives customized dsRNA ligase programs
- Enables scaling of promising assets already in clinical development

### Customized dsRNA Ligase Enzyme Supply

- First commercial orders from a large pharma customer and a second drug innovator
- Additional partners evaluating CDXS dsRNA ligase

### In-House Ligation Capabilities

- Produce small quantities of GLP-grade RNA constructs
- First step toward becoming full-scale provider of RNA manufacturing services

**Offerings Designed to Encourage Rapid, Seamless Customer Uptake**

# ECO Synthesis Toolbox:
# Complete Enzymatic Synthesis Solutions

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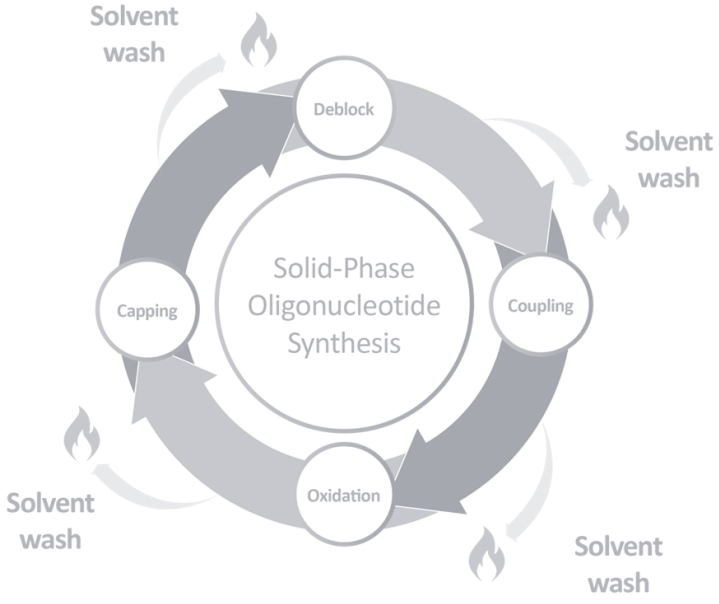
# ECO Synthesis Manufacturing Platform: the Complete Enzymatic Solution

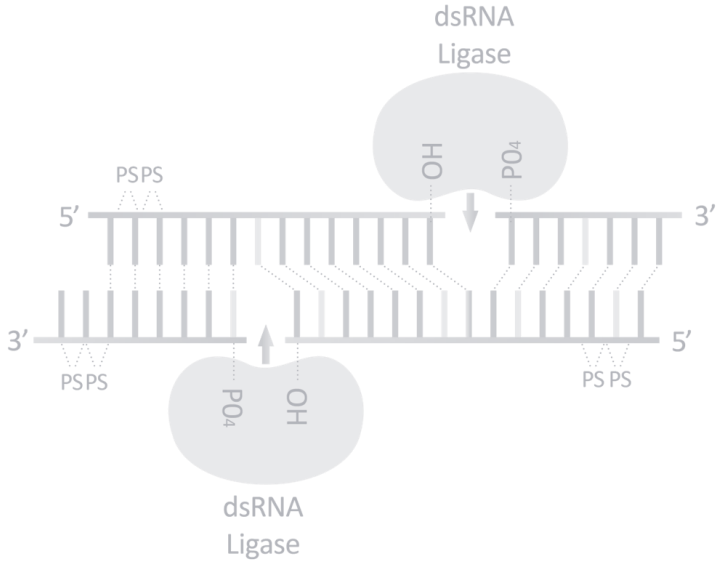
## ECO Synthesis Toolbox

### Chemical



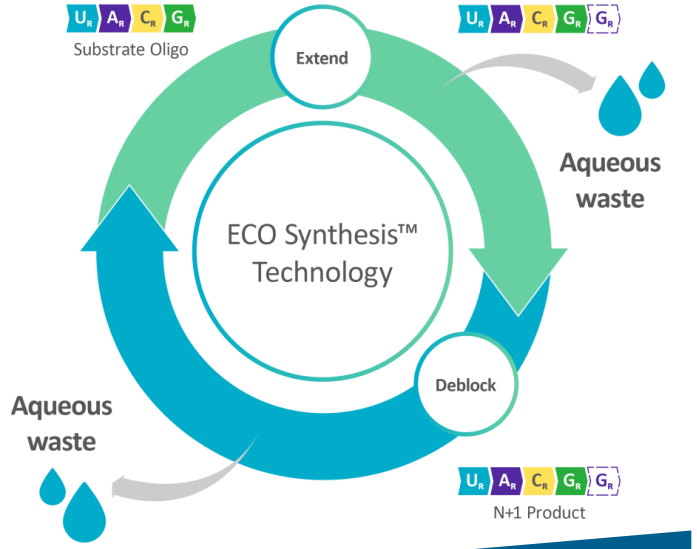

Traditional siRNA Synthesis Using Phosphoramidite Chemistry

### Hybrid




Fragments + Ligation

### Enzymatic




**Complete Enzymatic Synthesis**



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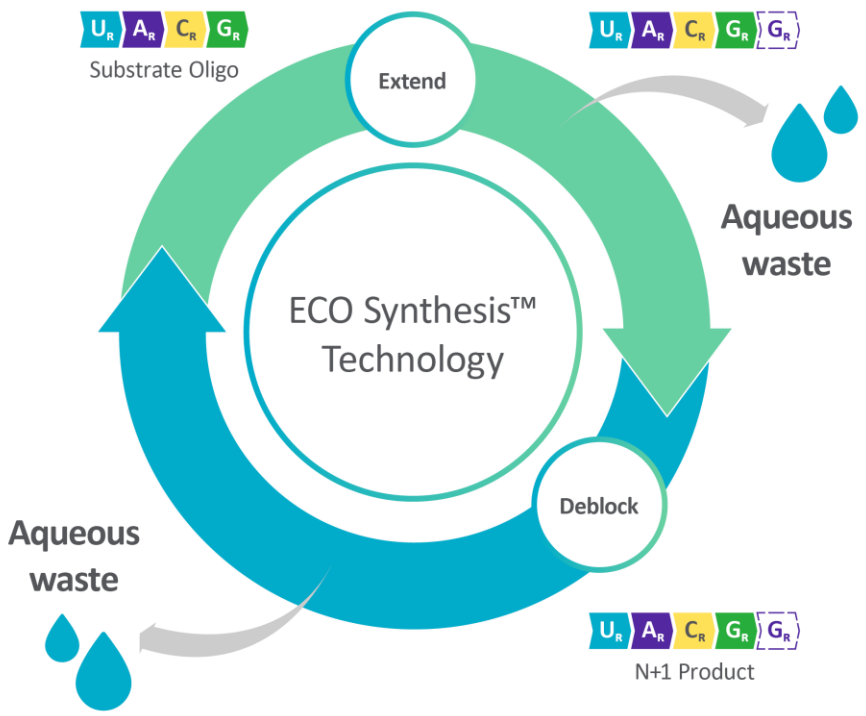
# A Novel Enzymatic Synthesis Method for RNA Manufacturing

## ECO Synthesis Manufacturing Platform Overview




| | |
|---|---|
| **Core Technology** | Sequential addition of modified RNA nucleotides |
| **Raw Materials** | Enzymatically generated NQPs (building blocks) & starter oligos |
| **Conjugation** | Enzymatic attachment of targeting moieties |

Codexis is the Leader for a Complete Enzymatic Solution



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# Staged Approach to Providing siRNA Material from GLP through GMP-Grade

## ECO Synthesis Innovation Lab

***Construction Completed December 2024***

### Offers Customers Path to GLP-Grade Material

- Enables in-house manufacture of GLP-grade material for customers' preclinical studies
- Provides venue to demonstrate process scalability for larger production in clinical trials

### Supports GMP Scale-Up

- Allows for tech transfer to GMP scale-up partners for clinical trial and commercial manufacturing

## Future Kg-Scale GMP Facility

### Provides siRNA for Early-Stage Clinical Trials

- Enable customers to conduct preclinical and early clinical-stage studies with Codexis
- Accelerate adoption of ECO Synthesis platform
- Allow for increased Codexis revenue capture over manufacturing life of a product

# Key Highlights

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# TIDES Europe 2024: Key Technical Highlights

- **Successfully Made Inclisiran using the ECO Synthesis Toolbox**
  - First ever end-to-end enzymatic synthesis of a complete siRNA therapeutic
- **Synthesized Inclisiran using Four Different Enzymatic Methods**
  - Illustrates flexibility and reliability of ECO Synthesis platform
- **Completed Multiple Proof-of-Concept Technical Collaborations**
  - Bachem
  - Major siRNA drug innovator

| Four Routes of Enzymatic Synthesis |
| --- |
| 1. Sequential enzymatic synthesis of full-length siRNA asset using ECO Synthesis technology |
| 2. Ligation of fragments produced by ECO Synthesis technology |
| 3. Ligation of fragments produced by ECO Synthesis technology & chemical methods |
| 4. Ligation of fragments produced by chemical methods |



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# Positioned to Win in Enzymatic Synthesis of RNAi Therapeutics

1. **CodeEvolver platform:** leading protein engineering technology
2. **20-year history** engineering solutions for complex therapeutics
3. **Significant market opportunity** given growing demand for RNAi therapeutics
4. Strong foundation of **large pharma customers and CDMO collaborators**
5. **First mover advantage** in enzymatic RNA synthesis with ECO Synthesis toolbox



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# Anticipated 2025 Milestones

- **Achieve pilot scale production with ECO Synthesis Innovation Lab for GLP material**
- **Sign a GMP scale-up partnership**
- **Secure ECO Synthesis raw materials supply chain**
- **TIDES USA & Europe annual meetings**
- **Convert pipeline of 7+ potential customers into revenue generating contracts**

# Thank You

Nasdaq: **CDXS**
www.codexis.com

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