

# NGS Grade Oligos

## High Purity, Competitive Pricing, Fast Turnaround Time

Next Generation Sequencing (NGS) is a high-throughput technology that enables the rapid sequencing of millions of base pairs for both DNA and RNA samples. There is a large demand for oligos throughout the NGS process to obtain high-quality results. Unfortunately, any contamination has a high possibility of resulting in the strong background or splicing error. These errors have the potential to seriously affect the successful sequencing results while wasting valuable time and effort in the process.

### Our Custom High Quality Oligos for NGS Services

Synbio Technologies' specialized Syno<sup>®</sup> 1.0 Oligo Synthesis Platforms allow us to deliver high-quality oligos for NGS applications such as indexed adapters, fusion primers for sequencing, and various other advanced products. In addition, our NGS grade oligos are recommended for a variety of NGS requests independent of the instrument or technology.

### COMPETITIVE ADVANTAGES

- ✓ **Industry-Leading Coupling Efficiency:** Minimally reducing the dimer generation of synthetic oligos.
- ✓ **Exclusive Production Processes:** Standardized and stringent quality controls to ensure batch-to-batch consistency.
- ✓ **Low Levels of the Cross-Contamination:** Strict purification standards to ensure high quality purity, often greater than 90%.
- ✓ **Flexible Oligo Specifications:** Highly customized formulation, mixing options and documentations are available.

### Featured Services



Syno<sup>®</sup> Adapters



Syno<sup>®</sup> Blocking Oligos



Syno<sup>®</sup> Hybrid Capture Probe



Amplification Oligos



Sequencing Oligos

# Syno® Adapters

Adapter ligation, which involves the addition of a defined sequence to the end of the fragmented, end-repaired or dA-tailed DNA samples, is a critical step in NGS. Synbio Technologies has launched a series of adapter products for various high-throughput sequencing platforms. We can delivery high quality adapters to enable efficient adapter ligation, sufficient library yields and minimized mismatch and sequencing errors.

## • Comprehensive Adapter Offering

Single-ended unique label



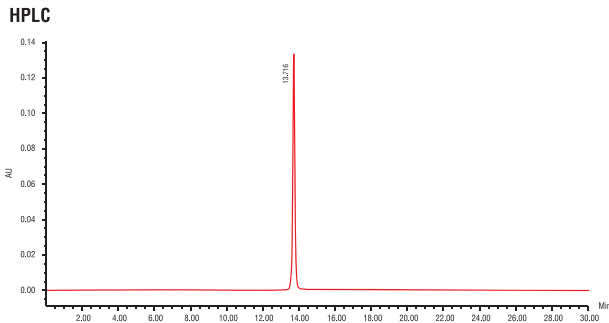
Double-ended unique label



Double-ended unique label plus single molecule label

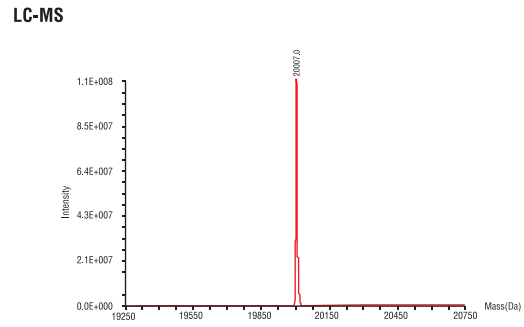


## • High Purity Guarantee



\* Strict purification processes ensure high purity primers with a purification efficiency of over 90%.

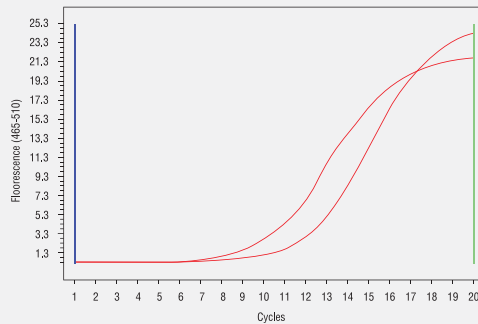
## • Extremely Low Base Error Rate



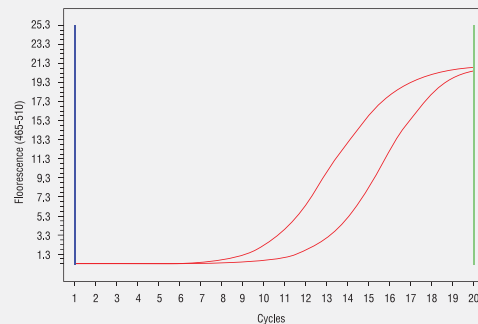
\* Molecular weight error range is less than one thousandth.

## • High Coupling Efficiency

qPCR with Syno® Adapters



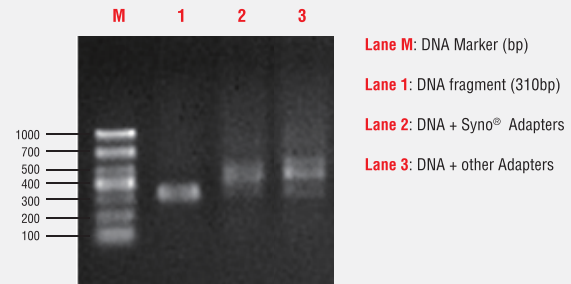
qPCR with other Adapters



	CT		$\Delta$ CT
	DNA oligo	adapter	
Syno® Adapters	7.2	8.5	1.3
other Adapters	7.5	9.3	1.8

\* Syno® Adapter was more efficient at binding with DNA after annealing. (The smaller the  $\Delta$ CT value, the higher the connection efficiency).

Agarose gel electrophoresis (2%)



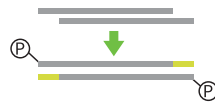
\* Syno® Adapter had significant less unbound DNA residuals.

## • Adapters Application in NGS Workflow

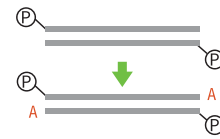
### 1 DNA Fragmentation



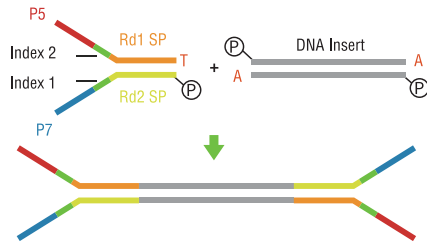
### 2 End Repair



### 3 Poly A Addition



### 4 Adapter Connection



### 5 Amplification



## Syno® Blocking Oligos

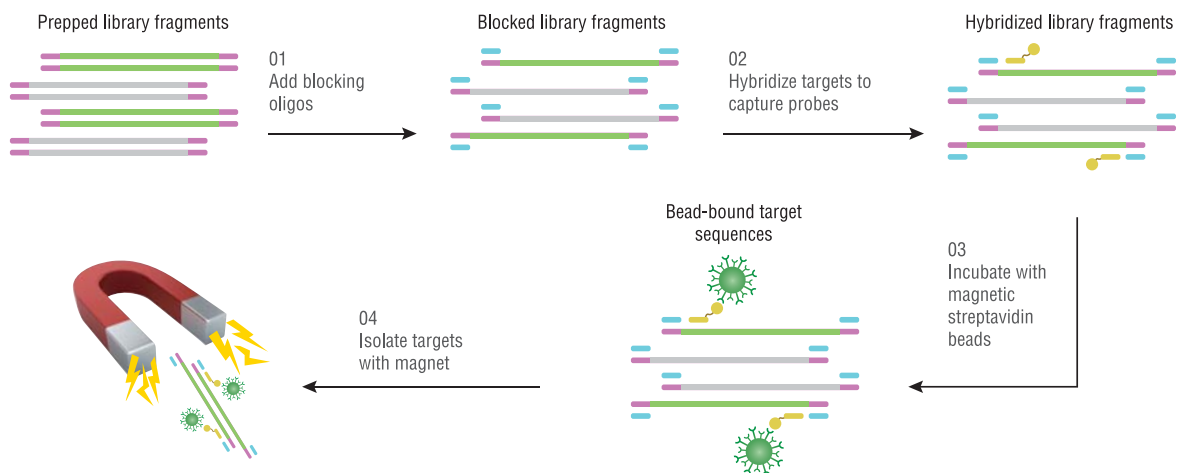
In Whole-Exome Sequencing (WES) or Target Region Sequencing (TRS), blocking oligos couple with library adapter sequences to reduce the hybridization between adapters and capture probes during the library enrichment process. Synbio Technologies provides optimized and practical blocking oligos for minimizing the off-target effect of the capture probe and improving the specificity of capture sequencing.

We can customize blockers, offer comprehensive modifications, extra purification and special delivery format to meet our customers' requests. Each Syno® Blocking Oligo is synthesized individually under stringent MS quality control and additional functional verification. We will deliver high-performance blocking oligos to effectively increase the capture efficiency with dual- or single- index adapters when library enrichment.

### Competitive Advantages

- ✓ High purity guarantee.
- ✓ Extremely low base error rate.
- ✓ Low cross-contamination.
- ✓ Customizable synthesis services.

### Target Capture



- Target sequences
- Adapter sequences
- Off-target sequences
- Blocking oligos
- Biotin
- Streptavidin-coated magnetic beads

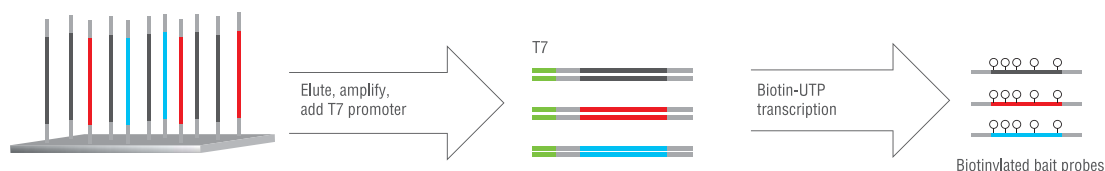
## Syno® Hybrid Capture Probe

Effective specific probes are well-designed to capture target DNA and set up library enrichment in various high throughput sequencing (WES, TRS). Based on our qualified and optimized oligo design and synthesis platform, Synbio Technologies can offer custom hybrid capture probes and a series of sequence capture probes for personalized drug or disease susceptibility gene variation research.

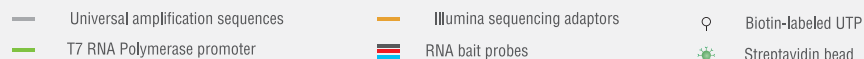
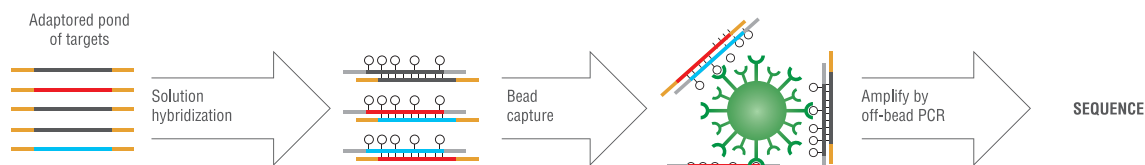
### Competitive Advantages

- ✓ Multiple probe schemes, individually synthesized single probe (120 nt Biotin) or high-throughput probe pool.
- ✓ High sequence accuracy and specificity, effectively improving capture efficiency.
- ✓ Target region enrichment, reducing sequencing cost and the difficulty of massive data analysis.
- ✓ Customizable services with reliable quality and high performance.

#### (a) Generation of RNA bait capture probes



#### (b) Solution hybrid selection



### NGS Grade Oligos Service Details

Specifications	Turnaround Time	Deliverables	Price
Indexed Adapters	5~7 Business day	Products in tube/plate/chip Comprehensive QC report (HPLC, MS)	Inquire
Capture Probe (DNA oligos – 120 nt biotin, Oligo pools, Multiplex PCR oligos)	Inquire		
Blocking Oligos	5~7 Business day		
Other NGS Oligos			

## Our Services

- Oligo/Probe Synthesis
- Gene Synthesis
- CRISPR
- DNA Library Construction
- Molecular Biology Services
- Protein Expression and Purification
- Antibody Services
- Gene Sequencing and Analysis

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