

# PrimeSyn Lab Inc.

Cutting Edge Custom DNA and Organic Synthesis

**PSLi** PrimeSyn Lab (PSL) is registered with the U.S. Food & Drug Administration (FDA) to develop, manufacture and sell Analyte Specific Reagent (ASR) products. PSL has unrivaled experience in the area of complex DNA, RNA, and small molecule synthesis, as well as their purification and characterization. Our mission is to provide superior quality and services in custom synthesis, contract research and specialty organics at competitive prices.



## CAPABILITY:

MODIFIED DNA/RNA SYNTHESIS

PROPRIETARY METHODOLOGY IN MAKING POLY "G" SEQUENCES

PURIFICATION OF SEQUENCES WITH SECONDARY STRUCTURES

DYE-LABELED PROBES

ORGANIC SYNTHESIS

PROTEIN ANALYSIS/PURIFICATIONS

COMPLETE TRACEABILITY

CONSULTANCY

MASS SPECTRAL ANALYSIS

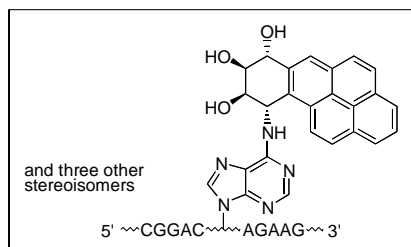
PATENT REVIEW



Water's HPLC system

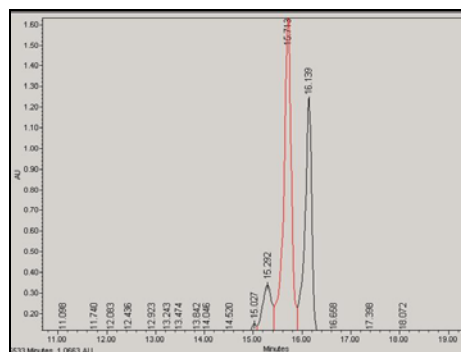
## PSL EXPERTISE:

- Multi-step organic synthesis and incorporating these modified nucleoside derivatives into DNA.



Codon 60-62 of the human *N-ras* proto-oncogene containing benzo[*a*]pyrene diol epoxide adduct at the dA residue

G rich sequence separation containing N-1 failure oligo by HPLC:



**GATCGCCGTACGTGGGGGATGGGGA**  
(25mer in blue) and  
**ATCGCCGTACGTGGGGGATGGGGA**  
(24 mer N-1 in red).

## ANALYTE SPECIFIC REAGENT (ASR)

- ASR manufactured under cGMP in compliance with the FDA regulations 21 CFR820 and 21 CFR864.4020.
- Analyte Specific Reagent. Analytical and performance characteristics are not established
- Highly pure oligos >98-99% based on customer's need.
- Accountability, integrity, reliability and excellence in service
- Stringent quality management system
- All instruments validated (IQ/OQ/PQ) with complete maintenance record
- Customized Production Batch Record created for each run to meet individual needs
- Extensive analytical data provided with C of A



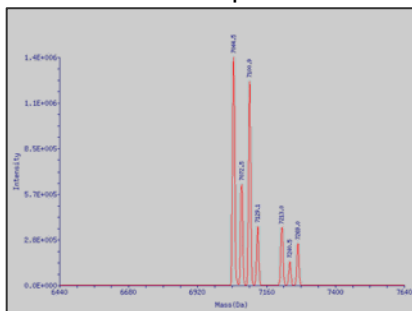
ABI 3900 synthesizers capable of 48 discrete DNA syntheses

## MASS SPECTRAL ANALYSIS

- Confirms molecular mass ( $\pm 5$  amu) for synthetic oligomers up to 100 mer.
- Monitor efficiency of synthesis and capping.

### *Why Do Mass Analysis?*

- Revealed incomplete cleavage of dimethylformamide group on G at room temperature.
- +28 amu (and their multiple) peak was observed due to the N-formyl group.
- HPLC, CE indicated one peak.
- Re-suspension in 30% ammonium hydroxide at 55 °C for two hours resulted in complete disappearance of the +28 amu peak.



Mass analysis with +28 peaks

## Gel Analysis

Provides gel analysis upon request.



*Innotech gel analysis system*

## SERVICES OFFERED:

### Surface modification

- Attachment to glass surface
- Coupling to Luminex beads
- Linkage to gold surface

### Dye-labeled synthesis

- Taq-Man probes
- Molecular beacons
- Scorpion Probes
- Other fluorescent labeled synthesis including Tamra, Fluorescein, FAM, etc.



*Beckman HPLC system*

### Back bone and other modifications

- Phosphoramidate
- Phosphorothioate
- Morpholino backbone
- PNA-DNA conjugates
- Ethylene glycol
- 3'- and 5'-disulfide, biotinylated, spacer, apurinic, 5'- and 3'- labeled phosphate
- Antisense oligonucleotides
- Custom synthesis of modified nucleosides and phosphoramidites
- Synthesis of triphosphate nucleoside and dye-labeled terminators

### Protein Analysis and Purification:

- HPLC analysis (reversed-phase/SEC/ion-exchange)
- CD/Fluorescence analysis
- Mass Spectral analysis
- Troubleshooting

## EQUIPMENT:

PrimeSyn Lab is fully equipped with all the necessary equipment.

Lab and freezer's temperature and humidity are constantly monitored and recorded using Omega Software. All the generated data are frequently backed up on a tape drive.

## Contact Information:

PrimeSyn Lab is a woman-owned minority business.

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