



# Clarity OTX

## Rapid Isolation of Oligo Therapeutics from Biological Samples

- > 80 % typical extraction recoveries
- No liquid-liquid extraction (LLE) required
- Suitable for a majority of therapeutic oligos, tissues, and fluids
- Optimized for LC-MS bioanalysis
- Can be automated for high-throughput



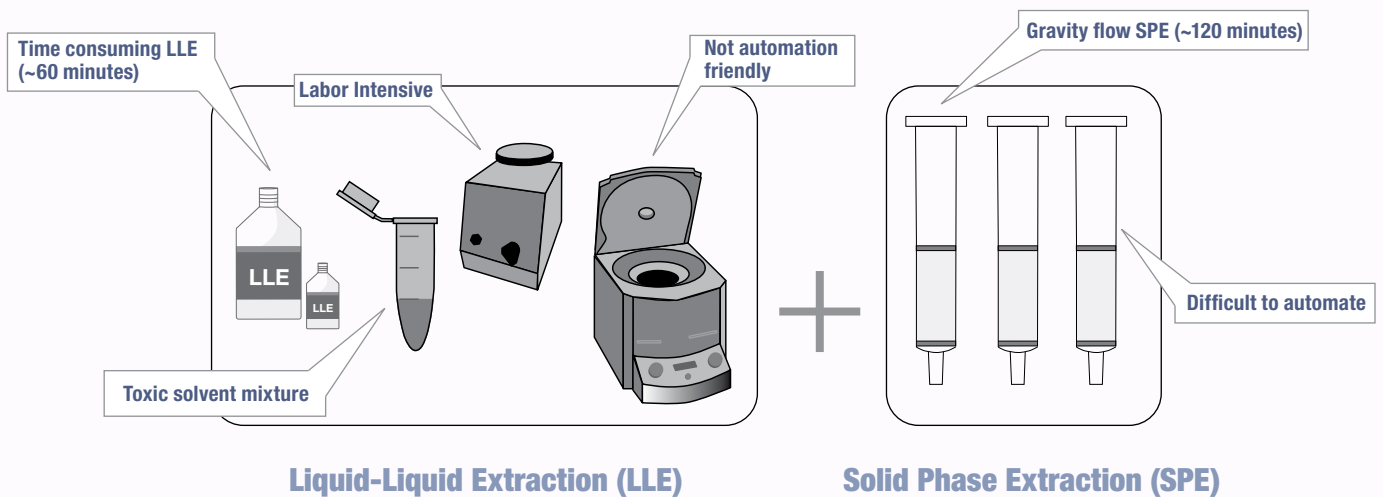
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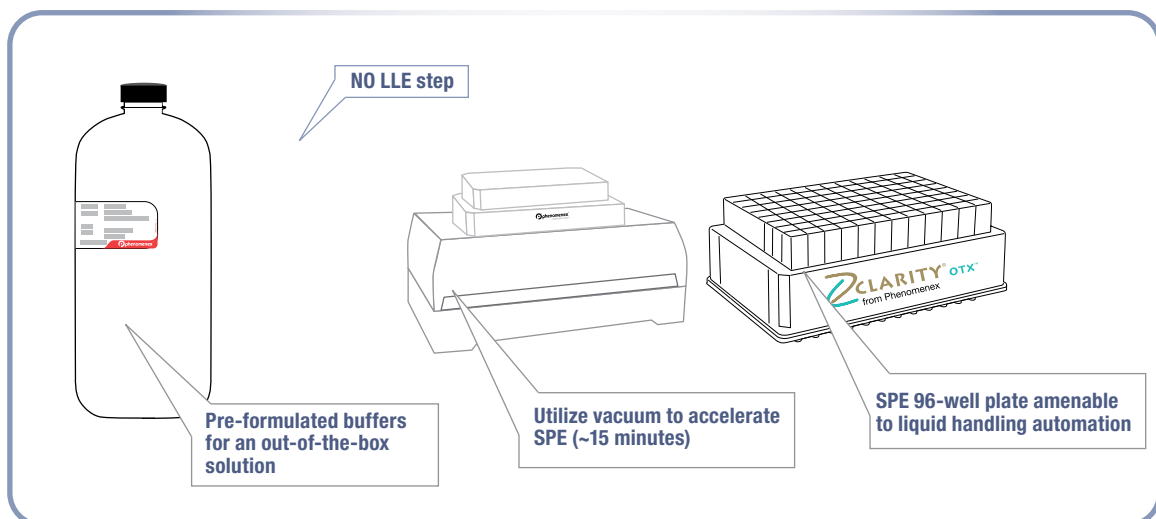
# High-Throughput by Design

Clarity® OTX™ was designed with the fast-paced DMPK/ADME environment in mind. It is a simple, rapid, and reproducible solution that efficiently extracts oligos from biological matrices and can be easily automated to eliminate sample backlogs and meet critical deadlines. By eliminating the need for LLE (liquid-liquid extraction), providing a 96-well plate format for liquid handler compatibility, and specifically targeting synthetic oligo therapeutics chemistries, Clarity OTX delivers a 15-minute solid phase extraction procedure.

## Common Extraction Procedure (~180 minutes)



## Clarity OTX Extraction Procedure (~15 minutes)




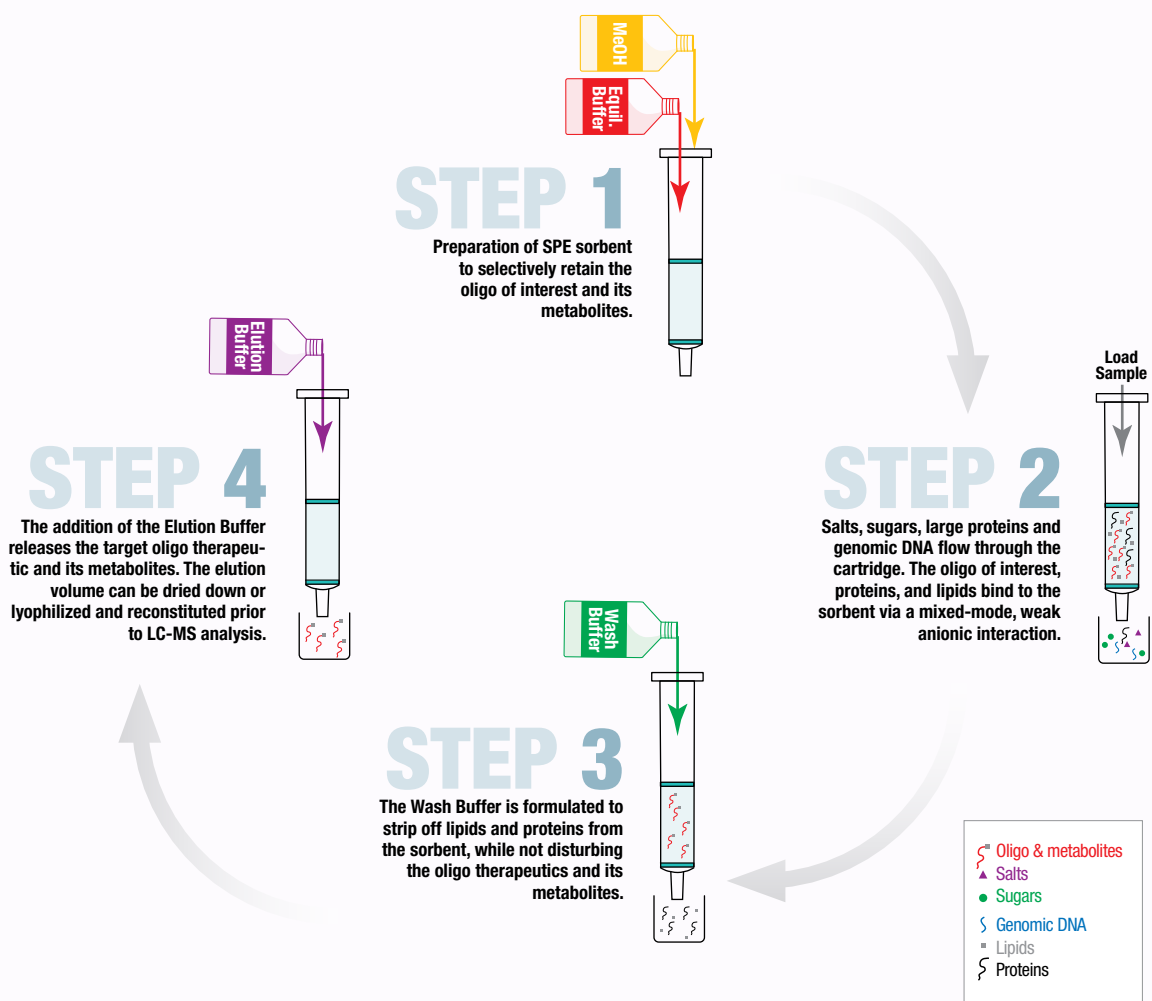
# Rapid Oligo Cleanup

In just 4 steps, scientists can efficiently cleanup therapeutic oligos and their metabolites from biological samples. The Clarity® OTX™ extraction protocol effectively removes cell debris such as proteins, genomic DNA, and lipids which can significantly mask the oligo therapeutics of interest. By removing these contaminants, MS baseline noise is considerably reduced resulting in easier quantitative bioanalysis.

## Simple 4-Step Extraction Protocol

Sample Pre-Treatment	
<b>Tissue</b>	- Proteinase K digestion or homogenize - Mix 1-to-1 with Lysis-Loading buffer
<b>Biological Fluids</b>	- Mix 1-to-1 with Lysis-Loading buffer

The Lysis-Loading buffer was designed with the optimal blend of chaotrope and detergent in order to facilitate the selective binding of oligo therapeutics and metabolites

# Clarity OTX Applications

Explore the following Clarity® OTX™ Resources:



Automated Method Development of Oligonucleotide in Tissues Using Clarity OTX 96-Well Plate and High Resolution Mass Spectrometry



Improvements in Sample Preparation and LC-MS Analysis of Therapeutic Oligonucleotides for ADME/Pharmacokinetic Studies From Serum and Plasma Using Clarity® OTX™ and Oligo HTCS™



Rapid Extraction of Therapeutic Oligonucleotides from Primary Tissues for LC-MS Analysis Using Clarity® OTX™, an Oligonucleotide Extraction Cartridge



Sample Preparation Strategies for Oligonucleotide Bioanalytical Workflows








Extraction of 2'-MOE Phosphorothioate from Tissue Using Clarity OTX



Extraction of 2'-MOE Phosphorothioate from Plasma Using Clarity OTX

# Rapid Oligo Cleanup

PURIFICATION		
Separation Goal	Clarity BioSolutions Recommendation	User Benefits
High-throughput, trityl-on reversed phase cartridge (RPC) purification	Clarity QSP™ 	<ul style="list-style-type: none"> <li>&gt;90 % purities and recoveries</li> <li>~20 minutes</li> </ul>
RP-HPLC purification of failure sequences from target sequences	Clarity Oligo-XT Clarity Oligo-RP™ 	<ul style="list-style-type: none"> <li>High recovery reduces number of purification steps</li> </ul>
Quick removal of salt and excess reagent	Clarity RP-Desalting™ 	<ul style="list-style-type: none"> <li>70 % typical purity</li> <li>Economical format</li> </ul>
CHARACTERIZATION / ANALYSIS		
Rapid, high efficiency RP-LC-MS analysis for QC and characterization	Clarity Oligo-XT 	<ul style="list-style-type: none"> <li>&lt; 12 minute separation</li> <li>For HPLC and UHPLC systems</li> </ul>
Extraction of oligo therapeutics from biological samples for LC-MS bioanalysis	Clarity OTX™ 	<ul style="list-style-type: none"> <li>No Liquid-Liquid Extraction (LLE) required</li> <li>For tissues and biological fluids</li> </ul>

**Interested in Learning More about Clarity**

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Quotes, Methods, Tips... We're here to help

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# Ordering Information

Choose from 96-well plates or cartridges and stock up on 1L quantities of buffers.

Part No.	Description		Unit
KSO-8494	Clarity® OTX™ Starter Kit-Tubes	Includes: 100 mg/3 mL cartridges (x50) Lysis-loading buffer (100 mL) Equilibration buffer (250 mL) Wash buffer (350 mL) Elution buffer (100 mL)	ea
KSO-9253	Clarity OTX Starter Kit-96-Well Plate	100 mg/ 96-well plate (x1) Lysis-loading buffer (100 mL) Equilibration buffer (250 mL) Wash buffer (350 mL) Elution buffer (100 mL)	ea
8M-S103-4GA	Clarity OTX Microelution Well Plate	2 mg/ well	1/box
8E-S103-CGA	Clarity OTX Well Plate	25 mg/ well	1/box
8E-S103-EGA	Clarity OTX Well Plate	100 mg/ well	1/box
8B-S103-EBJ	Clarity OTX Cartridge	100 mg/3 mL	50/box
8B-S103-HCH	Clarity OTX Cartridge	500 mg/6 mL	30/box
ALO-8579	Clarity OTX Lysis-Loading Buffer V2.0	1 L	ea



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Clarity Oligo-XT is patented by Phenomenex. U.S. Patent No. 7,563,367 and 8,658,038 and foreign counterparts. Clarity OTX and QSP are patented by Phenomenex. U.S. Patent No. 7,119,145.

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