

Use of Multiplexing and Alternative Sample Preparation Techniques for High Throughput Toxicological Screening

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February 2016



Lehigh Valley Toxicology

TIC-PL-082-273

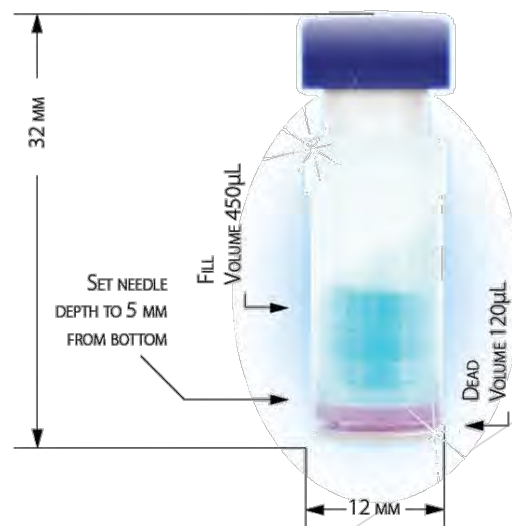
Sample Preparation Options

- ▶ Extraction:
 - ▶ Solid Phase Extraction, Supported Liquid Extraction, Liquid-Liquid Extraction
- ▶ Filter Vials
 - ▶ Process to dilute and filter urine and oral fluid samples



Thomson Filter Vials

- ▶ Shown to reduce matrix interferences for both urine and oral fluid
- ▶ Demonstrates adequate analyte recovery
- ▶ Simple and efficient method that eliminates solvent waste and other typical extraction consumables



eXtreme® Filter Vial Method

1.



2.



3.

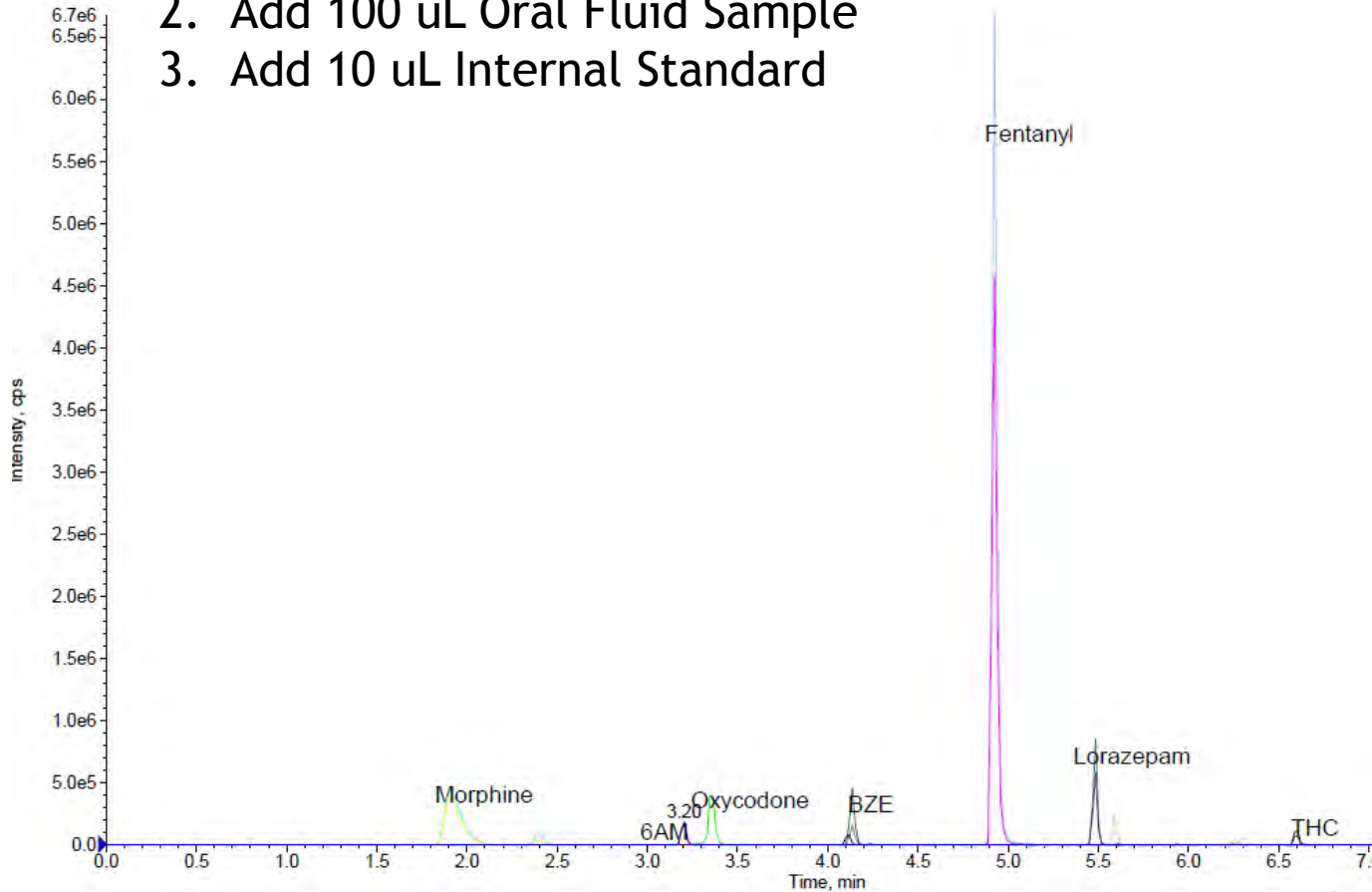


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<http://htslabs.com/downloads/FilterVialFlier.pdf>

Extracted Control

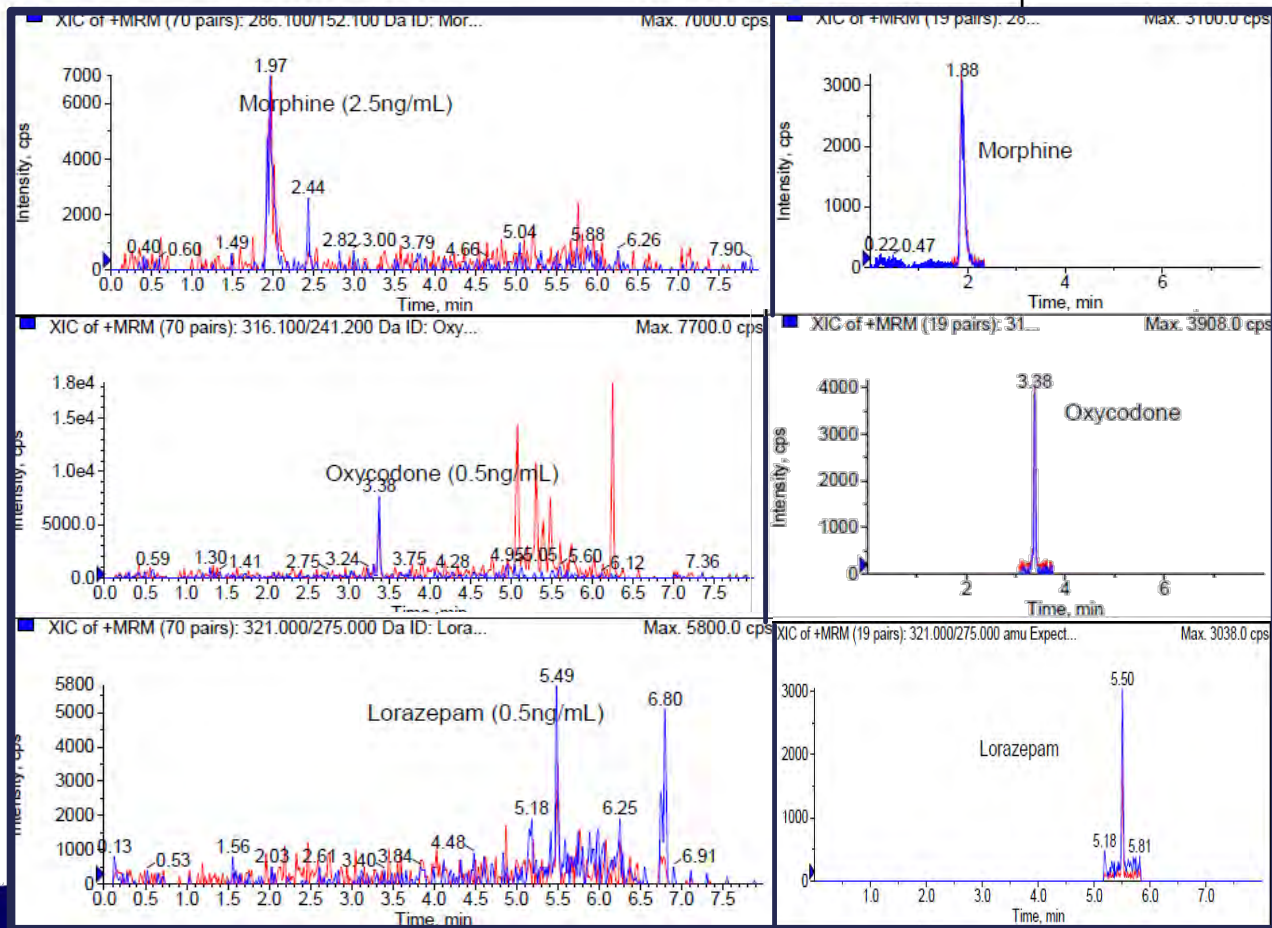
1. Add 100 uL of 20% MeOH (0.1% FA):80% H₂O (0.1% FA)
2. Add 100 uL Oral Fluid Sample
3. Add 10 uL Internal Standard



Limit of Detection Study

Unscheduled

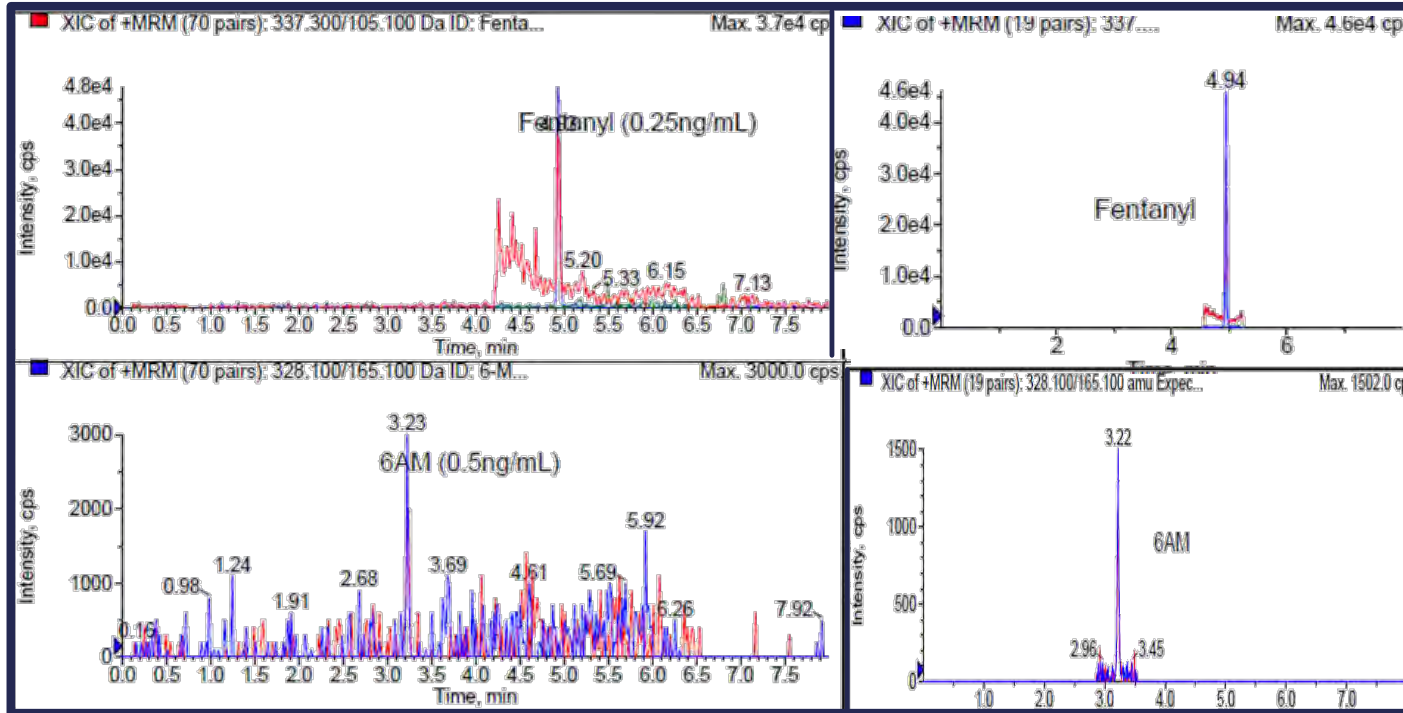
Scheduled



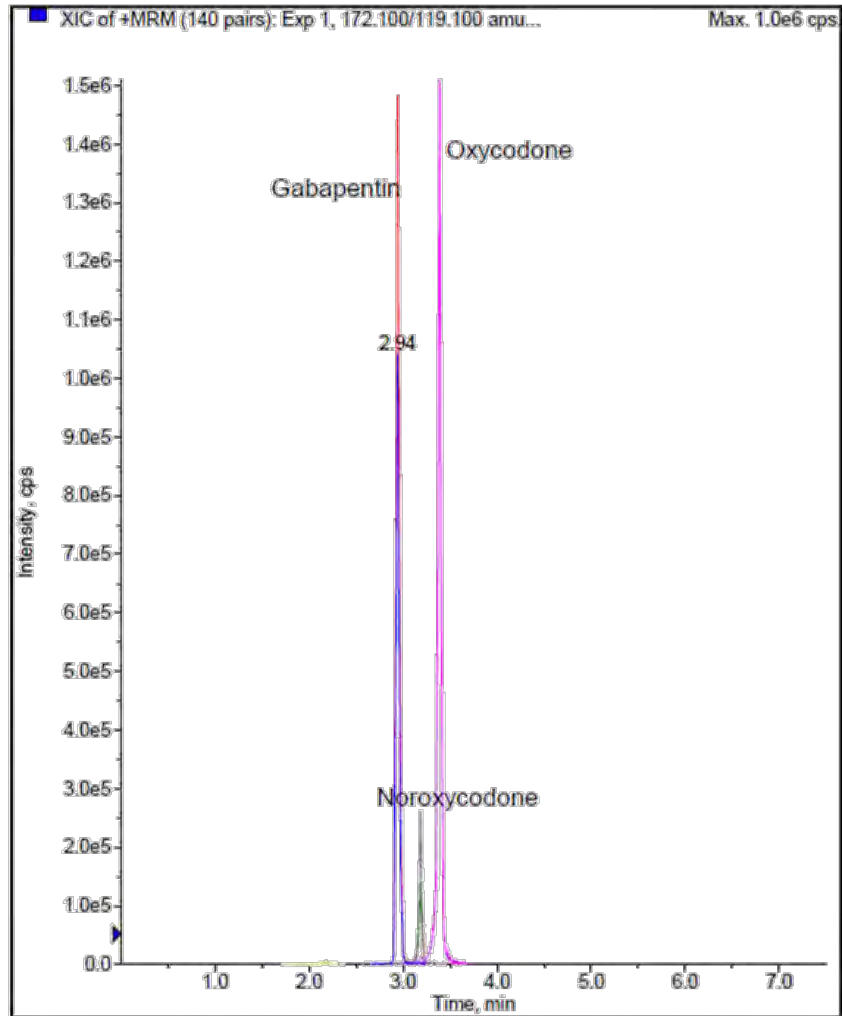
Limit of Detection Study

Unscheduled

Scheduled



Authentic Oral Fluid Sample



Comparison Studies

	SPE	Filter Vial
Number of Samples	48	48
Solvent Used	266.4 mL	4.8 mL
Solvent Waste	168 mL	0 mL
Extraction Time	~2 hours	~12 minutes
Equipment Cost	\$127.77**	\$120.00

**Does not include labor, extraction setup (manifold, pump, etc), maintenance, waste disposal



Filter Vials

- ▶ **Benefits:**
 - ▶ Increased efficiency
 - ▶ Decreased sample cost
 - ▶ Decreased solvent waste

- ▶ **Drawbacks:**
 - ▶ Minimal recovery of THC



Thank You!

Any questions please contact:

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