# Waters<sup>™</sup>

Application Note

# Ostro Sample Preparation Products: Recovery

Waters Corporation

This is an Application Brief and does not contain a detailed Experimental section.

## Abstract

As part of the evaluation of the Ostro plate, recovery for a broad range of analytes in human and rat plasma was evaluated to judge how well potential target compounds could be quantified.

#### Benefits

The Ostro plate demonstrates excellent recovery across a variety of conditions

# Introduction

Recovery determination is important for quantitative methods in that it provides a measure of the actual amount of analyte obtained from the matrix using a particular sample preparation device or technique. As part of the evaluation of the Ostro plate, recovery for a broad range of analytes in human and rat plasma was evaluated to judge how well potential target com-pounds could be quantified.

# Experimental

#### Samples

- · Human or rat plasma fortified at high, medium, and low concentrations
  - · Low concentration range: 0.2-40 ng/mL
  - · Medium concentration range: 2-400 ng/mL
  - · High concentration range: 20-4,000 ng/mL
- · 3 loading volumes:
  - $\cdot~$  50 µL plasma: 150 µL of 1% HCOOH in ACN
  - $\cdot$  100  $\mu L$  plasma: 300  $\mu L$  of 1% HCOOH in ACN
  - $\cdot$  200 µL plasma: 600 µL of 1% HCOOH in ACN

#### Analyte mixture

Fluticasone ·	Niflumic Acid
9-OH Risperidone ·	Propranolol
Clonazepam ·	Ketoprofen
Imipramine ·	Naproxen
Valethamate ·	Salicylic Acid
Terfenadine ·	Caffeine

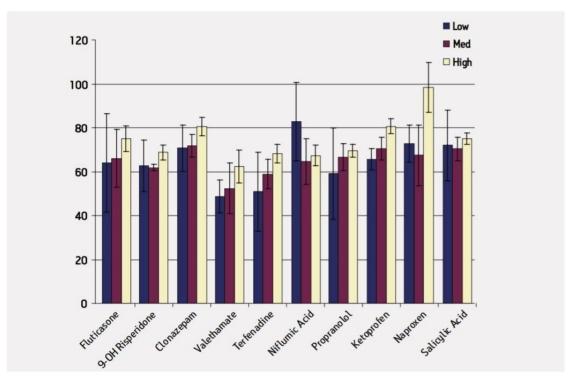
#### Protocol

- · Load plasma onto Ostro plate
- · Load extraction solvent
- · Aspirate 3X using electronic pipette set at same volume as extraction solvent
- Pull through using vacuum set at 15" Hg for 5 minutes
- · Dry down using nitrogen gas
- $\cdot~$  Reconstitute in same volume as plasma (50 µL, 100 µL, or 200 µL)

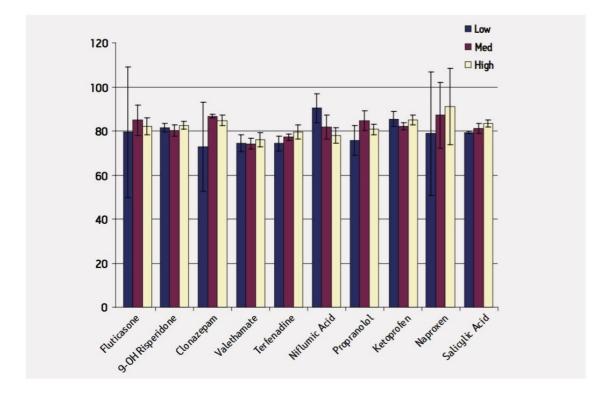
· Inject 8 µL into 10 µL loop

# Results and Discussion

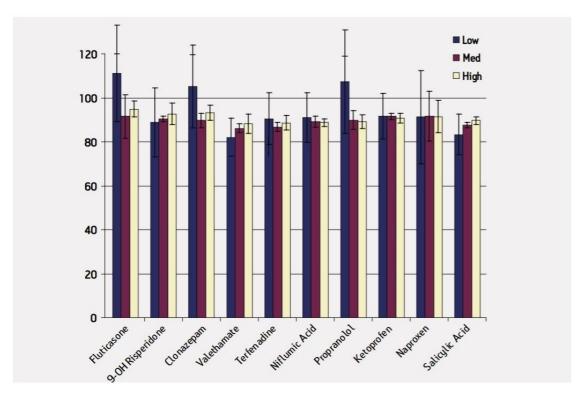
### Analyte Recovery 50 µL Plasma Loaded: Rat Plasma

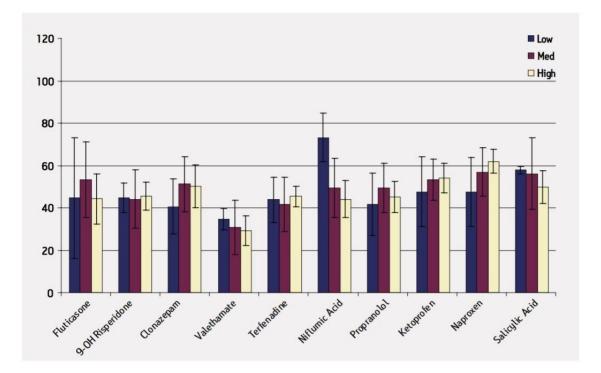






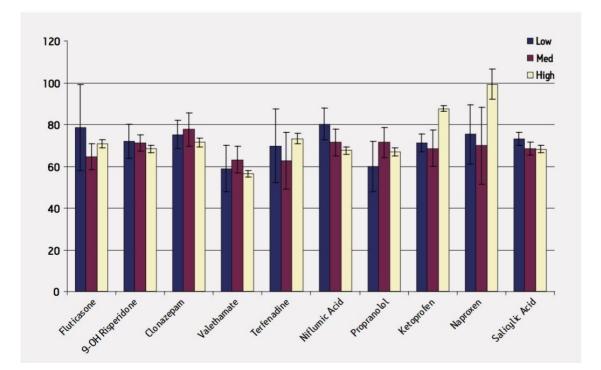
## Analyte Recovery 200 µL Plasma Loaded: Rat Plasma

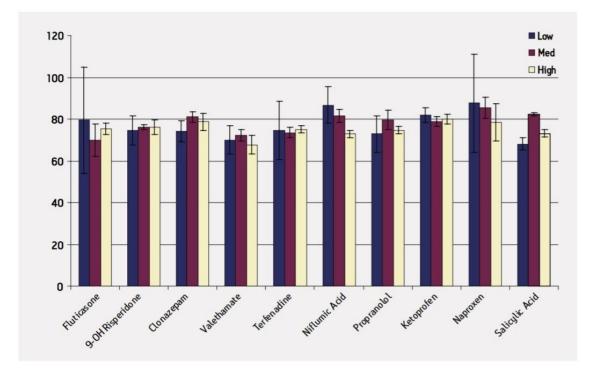




### Analyte Recovery 50 µL Plasma Loaded: Human Plasma\*

## Analyte Recovery 100 µL Plasma Loaded: Human Plasma





#### Analyte Recovery 200 µL Plasma Loaded: Human Plasma

\* To improve recovery for small sample volumes, you may increase the ratio of organic solvent to plasma. Use of Waters Positive Pressure-96 Processor has also been shown to improve recovery.

## Conclusion

The Ostro plate demonstrates excellent recovery across a variety of conditions. In this evaluation, low, medium, and high concentrations of a range of compounds were examined and were consistently recovered using the device. This robustness was shown in both rat and human plasma.

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