

INTip™ Filtration

Tip-on-Tip™ Technology Guide



INTip™ Filtration utilizes a patent-pending Tip-on-Tip™ technology designed to promote the simplification and automation of complex sample preparation.

About Tip-on-Tip (ToT) Technology

ToT combines a top conductive wide bore tip with a bottom Filtration tip. ToT has three main methodologies: ToT Filtration, ToT Cleanup and ToT SPE.

Advantages:

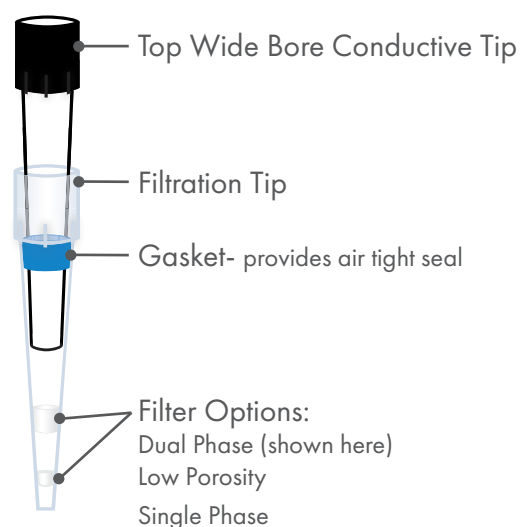
- Easy to use
- Fully automated solutions
- High reproducibility and efficiency

ToT Filtration:

Designed to automate traditional filtration/centrifugation. This methodology is ideal for high-throughput protein precipitation, filtration, beta-glucuronidase enzyme removal, or any other particulate removal, like cannabis solvent extract. This methodology eliminates the need for hardware like a centrifuge, or positive pressure manifolds.

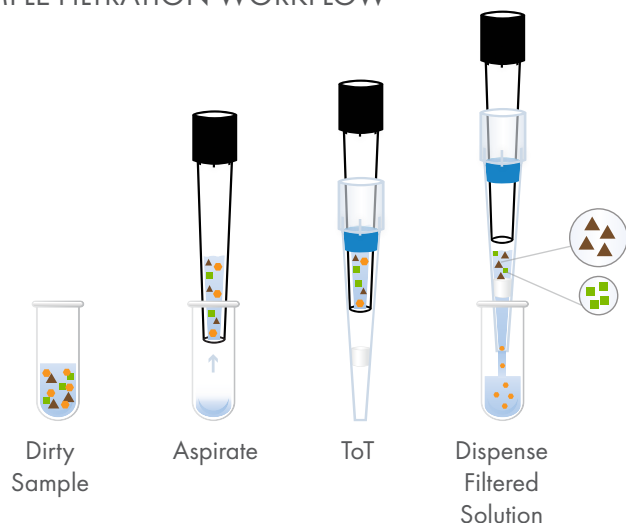
- No additional hardware
- High throughput – fast methods
- Automated alternative to manual centrifugation steps

Anatomy:



Rapid Automated Methods for High Throughput Workflows

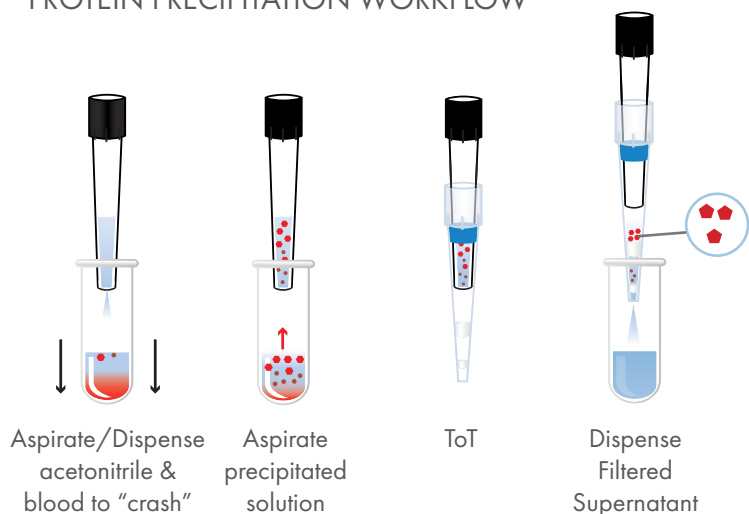
SIMPLE FILTRATION WORKFLOW



APPLICATIONS

- [Urine Filtration for \$\beta\$ -glucuronidase Enzyme Removal](#)
- [Automated Method for LC-MS/MS Quantitation of Testosterone from Serum](#)
- [Sensitive Analysis of Therapeutic and Abused Drugs in Whole Blood using Tip-on-Tip Technology with LC-MS/MS](#)
- [Automated Filtration for Cannabis Matrices](#)
- [Dried Blood Spot Analysis for Vitamin B6 and B9](#)

PROTEIN PRECIPITATION WORKFLOW



APPLICATIONS

- [Automated Vitamin D Extraction from Serum](#)
- [Semi Automated Protein Precipitation Method Using Tip-on-Tip Technology and the Integra ASSIST PLUS for Analysis of Benzodiazepines in Biological Fluids](#)

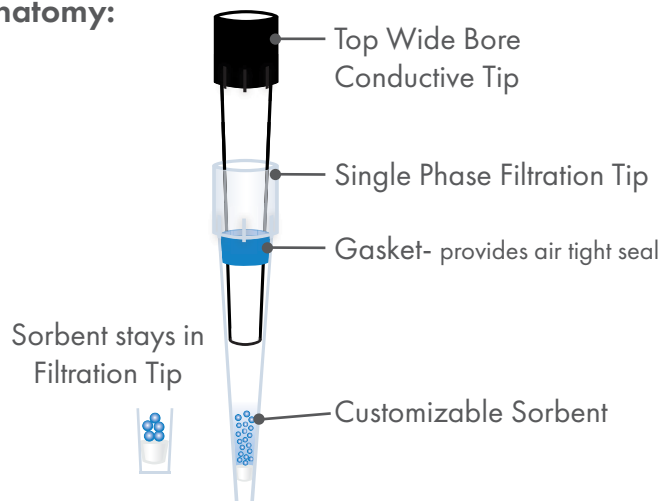
Introduce Chemistry for Additional Cleanup

These workflows can center around binding matrix to the sorbent (Tip-on-Tip Cleanup) where the filtrate has purified analyte to be further analyzed or around binding the analyte (ToT SPE) to be further washed and eluted.

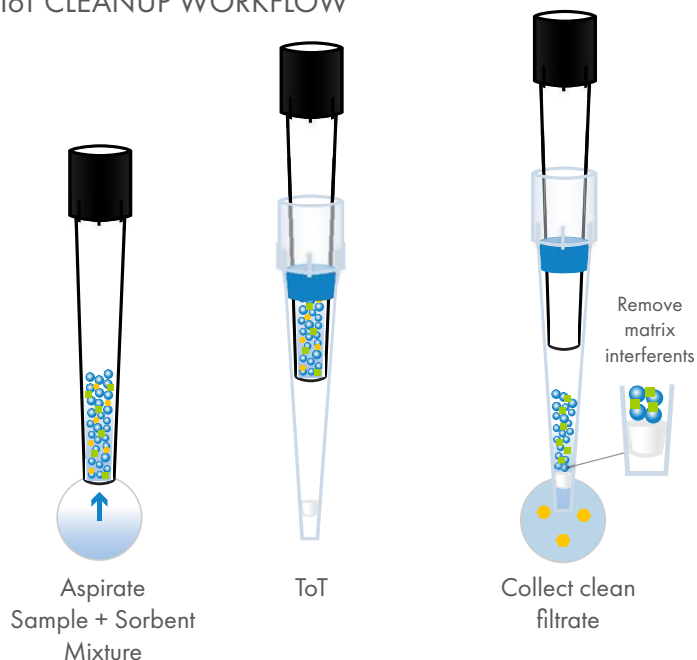
Advantages:

- Cleanup for viscous matrices
- Compatible with a variety of chemistries
- Customer can provide their own sorbent

Anatomy:



ToT CLEANUP WORKFLOW

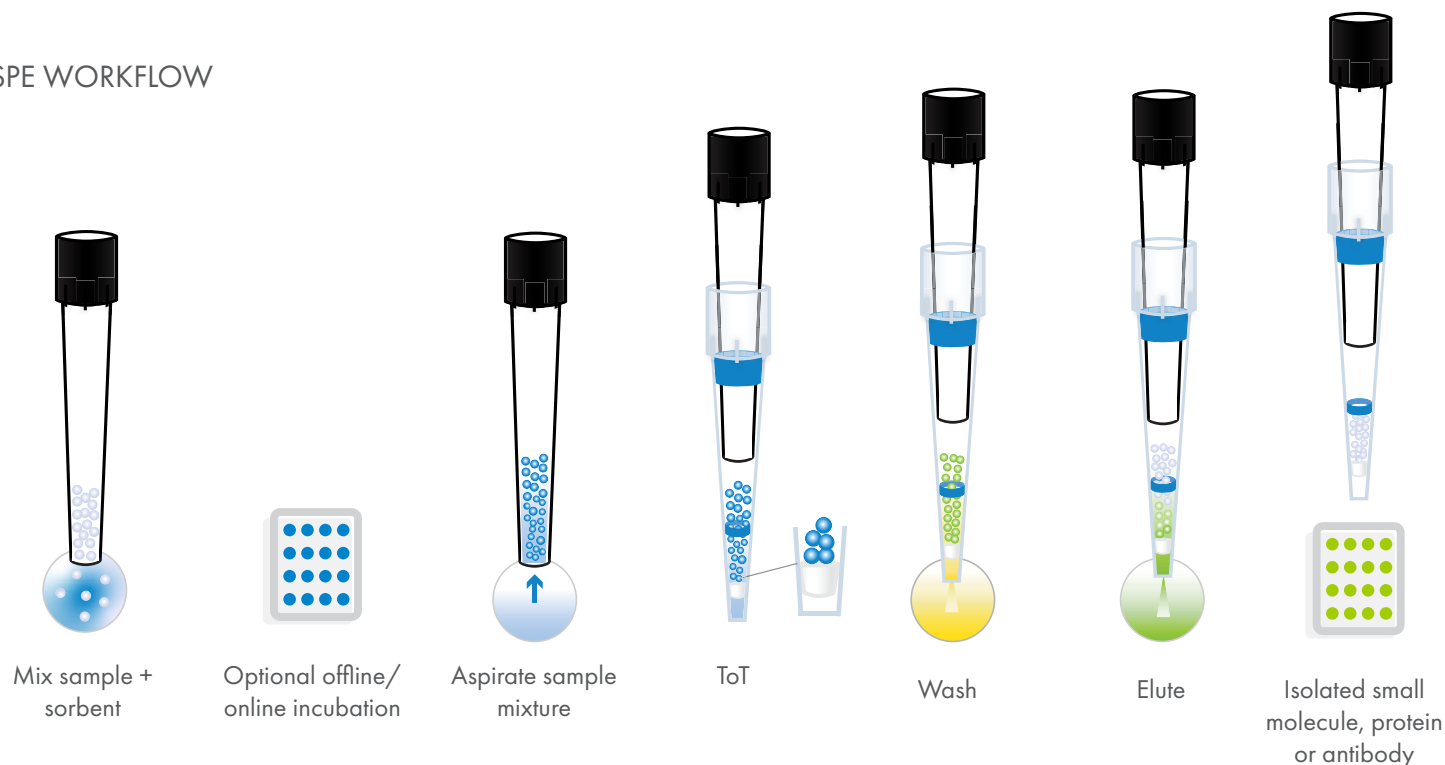


ToT Solid Phase Extraction (SPE):

ToT SPE is ideal for applications that require specific incubation conditions between sorbent and sample solution. ToT SPE utilizes a Single Phase Filtration Tip with a disperser. The disperser provides optimal dispersive solid phase extraction conditions. This tip is compatible with a variety of sorbent chemistries.

- Eliminate clogging
- Compatible with DPX vacuum for high sample/wash volume protocols
- Cost effective alternative to workflows that traditionally use magnetic beads

SPE WORKFLOW



APPLICATIONS

- [Tip-on-Tip Solid Phase Extraction of Viscous Oral Fluid Samples](#)

VIDEOS

- [Tip-on-Tip Protein Precipitation Workflow](#)
- [Tip-on-Tip SPE Workflow](#)
- [Sensitive Analysis of Therapeutic & Abused Drugs in Whole Blood Workflow](#)

High throughput workflows can process up to 96 samples. The ToT product line is compatible with Hamilton Robotics systems.



Dual Phase - Catalog Number: DPX170037

Two filters in series provide maximum filtration without clogging for higher volume blood and serum protein precipitation applications.

Low Porosity <1 μ m Catalog Number: DPX170068
Low Porosity - UltraPure Catalog Number: DPX170068U

High efficiency sub-micron matrix filtration. UltraPure grade for low detection level methods.



Single Phase - Catalog Number: DPX170069

Minimal dead volume ideal for small volume blood and serum protein precipitation applications. Can be used with sorbent for cleanup workflows.

Single Phase with disperser

Ideal for ToT SPE workflows. Two frit options are available for varying particle sizes of sorbent.

50 μ m Frit - Catalog Number: DPX170097

Low retention frit promotes minimum dead volume and maximum flows. Ideal for sorbents greater than 50 μ m in size.

30 μ m Frit -Catalog Number: DPX170098

Ideal for sorbents in the 30-50 μ m particle size range.

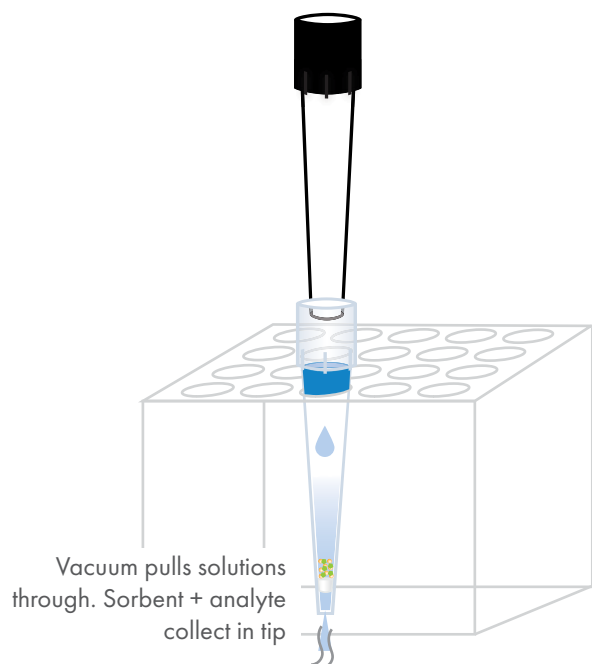


A vacuum is utilized to load large volumes of sample and wash solvents, with ToT SPE methods.

Accessories:

Vacuum Block

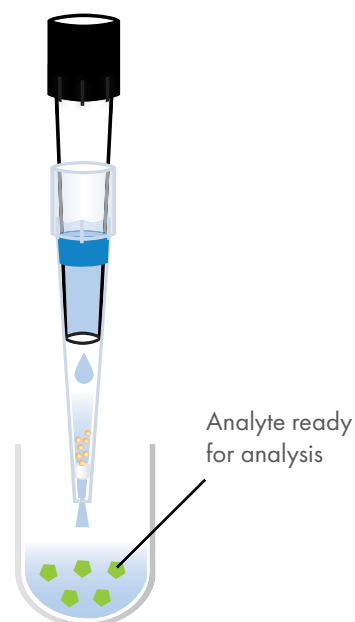
This is designed to custom fit the deck of a Hamilton Microlab Nimbus96 or STAR platform. A vacuum is optional for ToT SPE methods. Load large volumes of sample and wash solvents seamlessly while still allowing automated elution via Tip-on-Tip in a separate well plate location.



Dispense large volumes of solutions through filtration tips on a vacuum block



Tip-on-Tip



Dispense elution solution in separate well plate

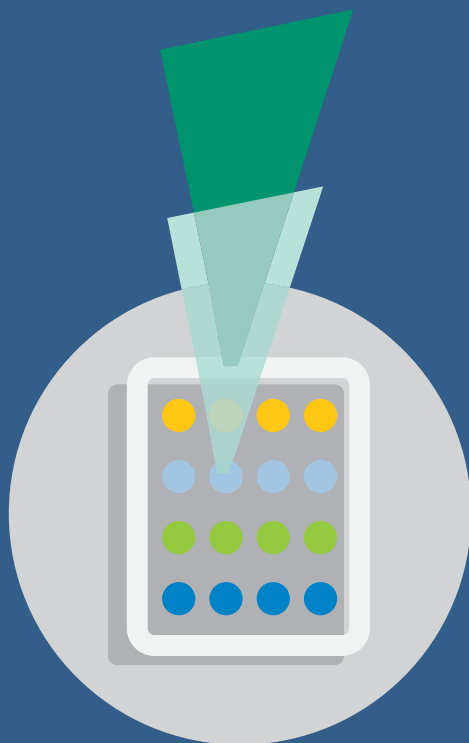
Sorbent Well Plate

An SPS format plate pre-loaded with sorbent. These can contain an DPX sorbent in a range of masses per well. Contact us for chemistry options not listed here.

WAX, WCX, SAX, SCX
RP, C18, Silica
Mixed Mode
HybridSPE®



Need custom method development? Our application scientists can help integrate DPX products into your existing workflow or develop new methods. Contact us for support.



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