

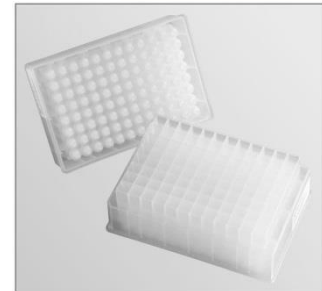
Solid Phase Extraction - SPE

Porvair offers a wide range of products for Solid Phase Extraction (SPE). The solved sample can be purified and concentrated to be eluted and then analyzed by LC-MS.

P³ Protein MicroLute

Protein 'crashes' out of solution and precipitates directly in each well when acetonitrile is added, thus solving all common problems associated with the CRASH technique of protein clean-up.

- Pre-filter frit at 100 µm traps flocculant particles >100 µm
- Secondary frit traps fine protein particles at <10µm
- The frits are hydrophobic and oleophobic. This retains sample/acetonitrile in the well to allow precipitation of proteins until vacuum is applied.
- Chemically inert filter material minimizes adsorption of samples
- Frit structure prevents breakthrough of protein particles
- PPLR frit consists of co-sintered plastics and chromatography media. The hydrophobic top frit prevents sample passing into the media during mixing.

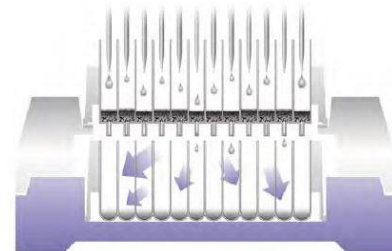


| Cat. No. | Description | Cs. |
|--------------|--|-----|
| 240100 | P ³ Protein Precipitation Plate | 1 |
| 240200 | P ³ Protein Precipitation Plate (bulk package of 5 pieces) | 5 |
| 240010 | High efficiency P³ Protein Precipitation Plate , with untreated frits, for samples which are mixed with acetonitrile before added to the plate | 1 |
| PPLR0251-100 | MicroLute™ PLR, 25 mg bed weight, 1 ml cartridge | 100 |
| PPLR025P-001 | MicroLute™ PLR, 25 mg bed weight, 96-well plate | 1 |

MicroLute™ SLE for viscous liquids

Diatomaceous-Earth is known for its big pore size and a high pore volume as well as high pH-resistance (1 - 13). These characteristics allow to remove hydrophilic contamination with high amounts of protein, phospholipids and salt being retained.

For purification of blood, plasma or serum before LC/MS analysis, environment and nutrition analysis as well as extraction of small amounts of water from hydrophobic solvents.



| Cat. No. | Description | Cs. |
|--------------|---|-----|
| PSLE2003-050 | MicroLute™ SLE, 200 mg bed weight, 3 ml cartridge | 50 |
| PSLE200P-001 | MicroLute™ SLE, 200 mg bed weight, 96-well plate | 1 |
| PSLE4003-050 | MicroLute™ SLE, 400 mg bed weight, 3 ml cartridge | 50 |
| PSLE400P-001 | MicroLute™ SLE, 400 mg bed weight, 96-well plate | 1 |

MicroLute™ Accessories

| Cat. No. | Description | Cs. |
|----------|--|-----|
| 219010 | Single-use reservoir, PVC, for collection of waste | 25 |
| 219004 | Sealing mat, square wells, for upper plate side | 50 |
| 219005 | Drain mat, seals plate bottom | 25 |

Microlute™ CP

Microlute™ CP takes SPE to a new level of performance by enhancing the **reproducibility** of analyte extraction and **recovery** from biological, environmental and chemical samples.

Unlike traditional loose-filled SPE methods, Microlute™ CP uses a hybrid structure, a solid interconnected network of evenly distributed pores combined with the retentive media (see image below). This design enhances the flow-through of samples to maximise interactions between analytes and the solid phase to deliver a reproducible SPE method that excels in performance, cleanliness and sensitivity.

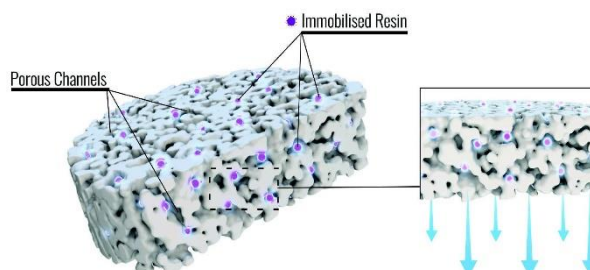
Product range: RP, SCX, SAX, WCX, WAX

Formats: 96-well plates and 3 ml cartridges

Bed Weight: 30 mg/well or cartridge

Analysis: UHPLC, HPLC, GC, LCMS, GCMS

Applications: Drugs of abuse detection, metabolite analysis, food analysis



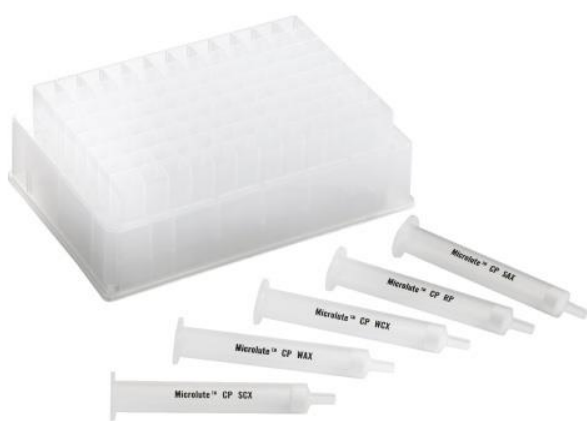
Reverse Phase (RP): Retention of neutral compounds through hydrophobic interaction with some retention of polars.

Strong Cation Exchange (SCX): Sulphonic acid functional group on a polymeric base with a pKa of <1 provides a wide pH range for cationic exchange.

Strong Anion Exchange (SAX): Quarternary ammonium chemistry on a polymeric base with a pKa >18 which is ideal for the capture of acidic analytes.

Weak Cation Exchange (WCX): Retain strongly basic compounds which are always ionised at any pH. Carboxylic acid ligand with a pKa ~4.5 which allows ionisation and neutralisation of the resin combined with the polymeric base.

Weak Anion Exchange (WAX): Retain strongly acidic compounds which are always ionised at any pH. Tertiary amine ligand on the polymer base with a pKa ~8.5 which allows ionisation and neutralisation of the resin combined with the polymeric base.



High Recovery of Analytes

> 90 % Recovery for Acidic, Basic & Neutral Analytes

Market Leading Reproducibility

< 4 % RSD (relative standard deviation) for greater confidence in results

| Cat. No. | Description | Format | Cs. |
|---------------|-------------|----------------|-----|
| P-PRP030P-001 | 30 mg RP | 96-well plate | 1 |
| P-SCX030P-001 | 30 mg SCX | 96-well plate | 1 |
| P-SAX030P-001 | 30 mg SAX | 96-well plate | 1 |
| P-WCX030P-001 | 30 mg WCX | 96-well plate | 1 |
| P-WAX030P-001 | 30 mg WAX | 96-well plate | 1 |
| P-PRP0303-050 | 30 mg PRP | 3 ml cartridge | 50 |
| P-SCX0303-050 | 30 mg SCX | 3 ml cartridge | 50 |
| P-SAX0303-050 | 30 mg SAX | 3 ml cartridge | 50 |
| P-WCX0303-050 | 30 mg WCX | 3 ml cartridge | 50 |
| P-WAX0303-050 | 30 mg WAX | 3 ml cartridge | 50 |

→ Please contact us to receive further information.

Combinatorial MicroLute™

Combinatorial MicroLute™ allows to use customized sorbents which conform to the requirements of the separation.



- Up to 2 ml sample volume possible
- Low dehydration and support of frits
- 10 mg up to 100 mg sorbent/well compressed
- Up to 4 times faster than classic filter separation
- Plate design ideal for automation, conforms to ANSI/SLAS standards
- Long drips at the wells prevent contamination and ensure to hit the collection plate exactly

Also available with customized sorbents → Please contact us for further information!

| Cat. No. | Description | Cs. |
|----------|---|------|
| 240002 | Combinatorial - MicroLute™ plate, uncompressed, with PE-bottom frits, pore size 36 µm | 1 |
| 600033 | Same as 240002 but as bulk package | 20 |
| 240054 | Combinatorial – MicroLute™ plate, uncompressed, with PE-bottom frits, pore size 10 µm | 1 |
| 240011 | Empty 96-well MicroLute™ chamber without top or bottom frits | 40 |
| 239007 | Bottom frits 1.5 x 7.35 mm, Vyong F PE, pore size 36 µm | 1000 |
| 239010 | Bottom frits 1.5 x 7.35 mm, Vyong T PE, pore size 10 µm | 1000 |

Manifolds for SPE, Filter Plates and Automation

Vacuum manifolds are used to suck liquid during solid phase extraction or use of simple filter plates into special collection plates or deep well plates.

MicroLute™ Manifold (Acryl)

- Machined from crystal clear acrylic (top plate) and acetal polymer (plenum chamber)
- Suitable for most filterplates in ANSI/SLAS standard with long drip directors and for SPE plates, i. e. MicroLute™
- Valve controlling knob (on-off) for precise control of vacuum
- Compatible with deep well collecting plates with square wells of 350 µl, 1 ml or 2 ml and plates with a height up to 44 mm
- Airtight sealing through O-ring, removable cover plate
- Medium resistance to alcohols and weak acids



| Cat. No. | Description | Cs. |
|----------|--|-----|
| 228008 | Standard MicroLute™ Manifold for 96-well collecting plates | 1 |
| 228010 | Spacer Insert, PP, 1 ml, for use of round well PP plates, optional | 1 |
| 228012 | Spacer Insert, HDPE, for use of 15 mm high plates, optional | 1 |
| 219010 | Disposable reservoir, PVC | 25 |

Universal Robotic Manifold

- Designed to be easily assembled and disassembled by robotic manipulators
- Compatible with any filterplate type with short, medium or long drip directors (adapter available)
- Automated purification of SPE or DNA clean-up procedures
- Integrated valve for vacuum to provide complete control of vacuum pressure
- Fully compatible with most commercial robotic liquid handling systems
- Able to accommodate collection plates of 14 mm - 44 mm in height
- Chemically resistant

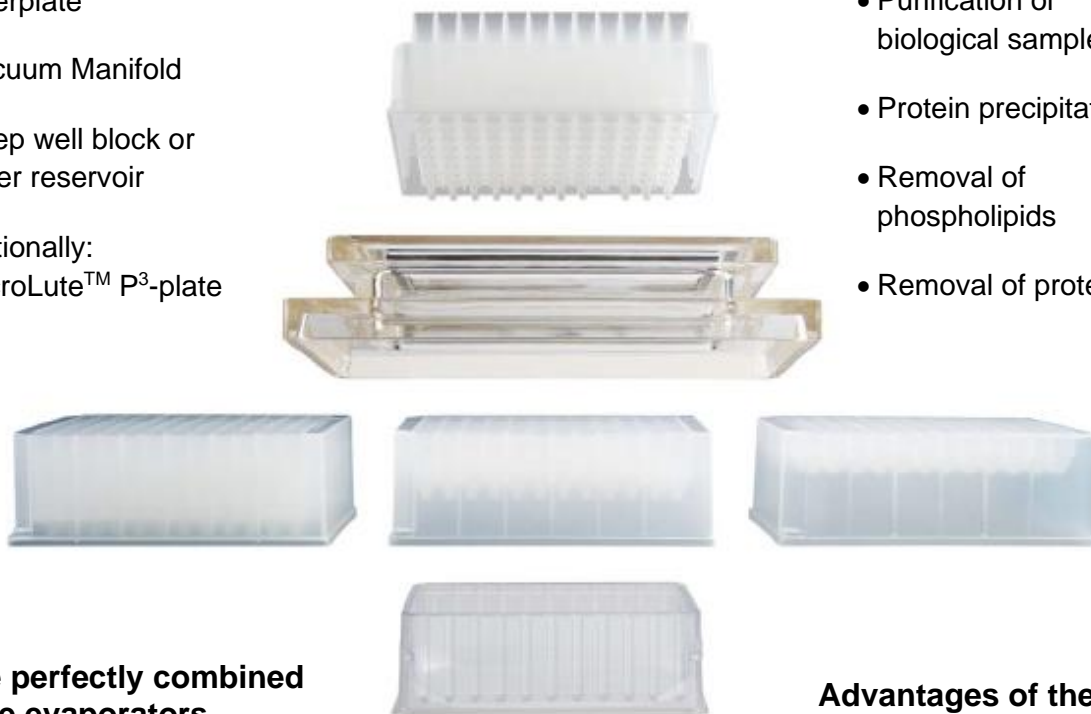


| Cat. No. | Description | Cs. |
|----------|--|-----|
| 228020 | Universal Robotic Manifold, compatible with 96-deep well collection plates | 1 |
| 228021 | Adaptor 1 for plates with half rim / semi long drips | 1 |
| 228022 | Adaptor 2 for plates with short rim / long drips | 1 |

MicroLute™ – a complete 96-well sample preparation system from Porvair Sciences

Components of the MicroLute™ system:

- Filterplate
- Vacuum Manifold
- Deep well block or other reservoir
- Optionally:
MicroLute™ P³-plate



Fields of application:

- Purification of biological samples
- Protein precipitation
- Removal of phospholipids
- Removal of proteins

Can be perfectly combined with the evaporators from Porvair Sciences:

- MiniVap™ Evaporator (manual)
- MiniVap™ Gemini (manual with two positions for evaporation)
- Ultravap™ Levante (fully automatic)
- Ultravap™ Mistral (fully automatic and robot compatible)



Advantages of the MicroLute™ system:

- Manifold from clear acryl for easy handling
- Plates from 100 % polypropylene prevent contamination
- 3 standard sizes (350 µl, 1 ml and 2 ml) for good recovery
- Standardised height of reservoirs

➔ Please ask for our separate flyer to receive more information on the evaporators and sealers from Porvair Sciences.