

EVOLUTE[®] EXPRESS SPE Products

Load-Wash-Elute SPE Products

EVOLUTE® EXPRESS

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Load-Wash-Elute SPE Columns and Plates

EVOLUTE® EXPRESS represents a leap forward in high throughput solid phase extraction. The EVOLUTE EXPRESS range of SPE columns and 96-well plates combine powerful EVOLUTE sorbent chemistry with innovative features that enhance productivity. With improved flow-through characteristics and by eliminating the need for conditioning and equilibration, sample preparation time can be cut by more than 1/3 using the simplified **Load-Wash-Elute** procedure.

Step 1 Load





Step 2 Wash



Step 3 Elute



 Interferences
 Analyte of interest

| Standard SPE procedure | EVOLUTE® EXPRESS Load-Wash-Elute procedure |
|------------------------|--|
| Condition | Not required |
| Equilibrate | Not required |
| Load | Load |
| Wash | Wash |
| Elute | Elute |

Fast and Efficient Flow Rates

EVOLUTE® EXPRESS products dramatically improve flow characteristics and enhance sample preparation productivity. Flow rates are fast and consistent even when loading aqueous biological fluid sample directly onto a dry column.

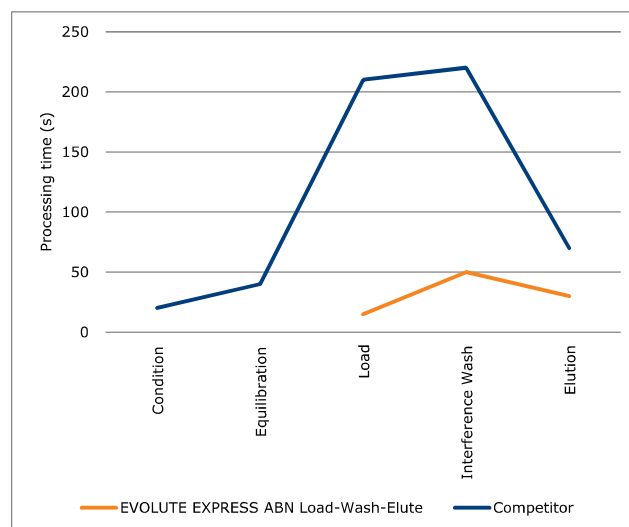


Figure 1. 10 mg/1 mL EVOLUTE® EXPRESS vs. competitor 10 mg/1 mL equivalent. N=12 for each product. Columns processed using the Biotage® PRESSURE+ instrument. Columns processed at 1 psi unless otherwise stated. Sample was pooled human urine diluted 1:3 with water.

Due to the difficulty in measuring times for each individual column, figures for the time to complete flow for the slowest flowing column are shown. For example for 10 mg EVOLUTE EXPRESS ABN load-wash-elute method, all samples loaded in less than 15 s, whereas for the competitor product, sample loading on all columns was complete after 210 s, and increased pressure (up to 5 psi) was required to load the total volume.

EVOLUTE® polymer-based SPE sorbents extract neutral, acidic and basic analytes from biological fluids and other aqueous matrices, the EVOLUTE retention and elution characteristics are completely predictable and extractions on these robust sorbents are not affected by drying of the sorbent bed during sample processing.

EVOLUTE® EXPRESS ABN

» For simultaneous extraction of acidic, basic and/or neutral analytes

EVOLUTE® EXPRESS CX

» For extraction of basic analytes

EVOLUTE® EXPRESS WCX

» For extraction of strongly basic analytes

EVOLUTE® EXPRESS AX

» For extraction of acidic analytes

EVOLUTE® EXPRESS WAX

» For extraction of strongly acidic analytes



Flexible Format for Cost Efficiency

EVOLUTE® EXPRESS columns are supplied as standard in the tabless (or flangeless) format. Up to 96 of the 1 mL format columns can populate a base plate for processing using the Biotage® Extrahera™, PRESSURE+ or vacuum manifold, as a cost effective, modular alternative to a 96-well plate.

EVOLUTE® EXPRESS Sorbent Selection Plate

The EVOLUTE® EXPRESS Sorbent Selection plate contains the four mixed-mode EVOLUTE sorbents CX, WCX, AX and WAX on one plate.

| | EVOLUTE CX | | | EVOLUTE WAX | | | EVOLUTE AX | | | EVOLUTE WCX | | |
|----------|------------|---|---|-------------|---|----------|------------|---|---|-------------|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | | | | | | | | | | | | |
| B | | | | | | | | | | | | |
| C | | | | | | | | | | | | |
| D | | | | | | | | | | | | |
| E | | | | | | | | | | | | |
| F | | | | | | | | | | | | |
| G | | | | | | | | | | | | |
| H | | | | | | | | | | | | |
| Method 1 | | | | | | Method 2 | | | | | | |

EVOLUTE EXPRESS Sorbent Selection Plate

| Part Number | Description | Qty. |
|---------------|---|------|
| 650-0010-PX01 | EVOLUTE EXPRESS 10 mg Sorbent Selection Plate | 1 |
| 650-0030-PX01 | EVOLUTE EXPRESS 30 mg Sorbent Selection Plate | 1 |

EVOLUTE® EXPRESS User Guide

For more information download the EVOLUTE® EXPRESS User Guide from www.biotage.com **www.biotage.com**. Literature part number UI330.

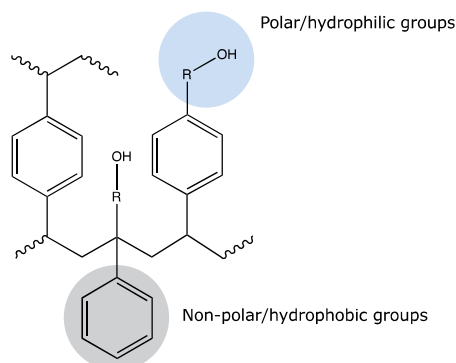


Biotage are constantly developing new applications on EVOLUTE® EXPRESS products. Visit www.biotage.com for the latest information.

EVOLUTE® EXPRESS

Load-Wash-Elute SPE

EVOLUTE® ABN



Chemical structure of EVOLUTE® ABN

Chemical Description:

Water wettable polystyrene-divinylbenzene incorporating non-ionizable hydroxyl groups.

| | |
|-----------------------|---|
| Average particle size | 30 µm, 50 µm |
| Pore diameter | 40 Å |
| Sorbent Type | Wettable non-polar sorbent with no secondary interactions |

Application: EVOLUTE® ABN can be used to extract a diverse range of acidic, neutral and basic analytes from biological fluids and other aqueous matrices. Performance is not adversely affected by drying the sorbent.

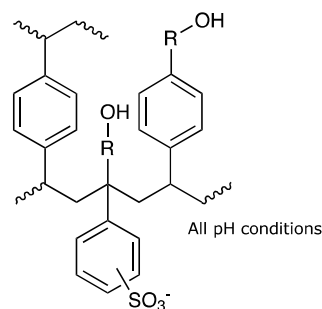
EVOLUTE EXPRESS ABN Tableless SPE Columns

| Part Number | Description | Qty. |
|--------------|---------------------------------|------|
| 600-0001-AXG | EVOLUTE EXPRESS ABN 10 mg/1 mL | 100 |
| 600-0003-AXG | EVOLUTE EXPRESS ABN 30 mg/1 mL | 100 |
| 610-0006-BXG | EVOLUTE EXPRESS ABN 60 mg/3 mL | 50 |
| 610-0015-CXG | EVOLUTE EXPRESS ABN 150 mg/6 mL | 30 |
| 610-0050-CXG | EVOLUTE EXPRESS ABN 500 mg/6 mL | 30 |

EVOLUTE EXPRESS ABN 96-well SPE Plates

| Part Number | Description | Qty. |
|---------------|---------------------------------|------|
| 600-0010-PX01 | EVOLUTE EXPRESS ABN 10 mg Plate | 1 |
| 600-0030-PX01 | EVOLUTE EXPRESS ABN 30 mg Plate | 1 |

EVOLUTE® CX



Chemical structure of EVOLUTE® CX

Chemical Description:

Sulfonic acid modified polystyrene-divinylbenzene incorporating non-ionizable hydroxyl groups.

| | |
|-----------------------|---|
| Average particle size | 30 µm, 50 µm |
| Pore diameter | 40 Å |
| Sorbent Type | Mixed-mode non-polar/strong cation exchange |
| Exchange capacity | 0.5 mmol/g |

Application: EVOLUTE® CX can be used to extract basic analytes from biological fluids and other aqueous matrices. Performance is not adversely affected by drying the sorbent.

EVOLUTE EXPRESS CX Tableless SPE Columns

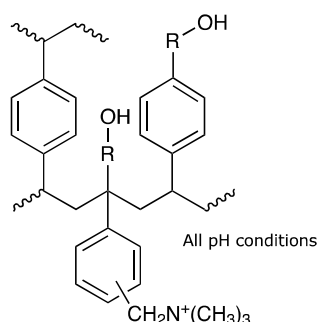
| Part Number | Description | Qty. |
|--------------|--------------------------------|------|
| 601-0001-AXG | EVOLUTE EXPRESS CX 10 mg/1 mL | 100 |
| 601-0003-AXG | EVOLUTE EXPRESS CX 30 mg/1 mL | 100 |
| 611-0006-BXG | EVOLUTE EXPRESS CX 60 mg/3 mL | 50 |
| 611-0015-CXG | EVOLUTE EXPRESS CX 150 mg/6 mL | 30 |
| 611-0050-CXG | EVOLUTE EXPRESS CX 500 mg/6 mL | 30 |

EVOLUTE EXPRESS CX 96-well SPE Plates

| Part Number | Description | Qty. |
|---------------|--------------------------------|------|
| 601-0010-PX01 | EVOLUTE EXPRESS CX 10 mg Plate | 1 |
| 601-0030-PX01 | EVOLUTE EXPRESS CX 30 mg Plate | 1 |

EVOLUTE EXPRESS products can be used with the Load-Wash-Elute procedure. See www.biotage.com for more information.

EVOLUTE® AX



Chemical structure of EVOLUTE® AX

Chemical Description:

Quaternary amine modified polystyrene-divinylbenzene incorporating non-ionizable hydroxyl groups.

| | |
|-----------------------|--|
| Average particle size | 30 μm , 50 μm |
| Pore diameter | 40 \AA |
| Sorbent Type | Mixed-mode non-polar/strong anion exchange |
| Exchange capacity | 0.7 mmol/g |

Application: EVOLUTE® AX can be used to extract acidic analytes from biological fluids and other aqueous matrices. Performance is not adversely affected by drying the sorbent.

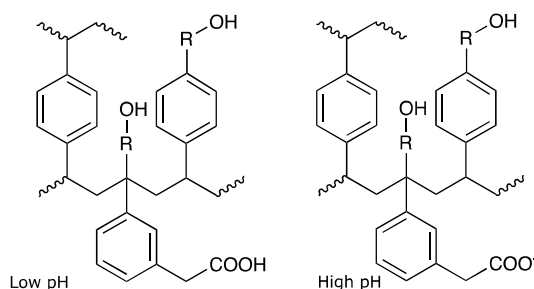
EVOLUTE EXPRESS AX Tableless SPE Columns

| Part Number | Description | Qty. |
|--------------|--------------------------------|------|
| 603-0001-AXG | EVOLUTE EXPRESS AX 10 mg/1 mL | 100 |
| 603-0003-AXG | EVOLUTE EXPRESS AX 30 mg/1 mL | 100 |
| 613-0006-BXG | EVOLUTE EXPRESS AX 60 mg/3 mL | 50 |
| 613-0015-CXG | EVOLUTE EXPRESS AX 150 mg/6 mL | 30 |
| 613-0050-CXG | EVOLUTE EXPRESS AX 500 mg/6 mL | 30 |

EVOLUTE EXPRESS AX 96-well SPE Plates

| Part Number | Description | Qty. |
|---------------|--------------------------------|------|
| 603-0010-PX01 | EVOLUTE EXPRESS AX 10 mg Plate | 1 |
| 603-0030-PX01 | EVOLUTE EXPRESS AX 30 mg Plate | 1 |

EVOLUTE® WCX



Chemical structure of EVOLUTE® WCX

Chemical Description:

Carboxylic acid modified polystyrene-divinylbenzene incorporating non-ionizable hydroxyl groups.

| | |
|-----------------------|--|
| Average particle size | 30 μm , 50 μm |
| Pore diameter | 40 \AA |
| Sorbent Type | Mixed-mode non-polar/weak cation exchange ($\text{pK}_a \sim 5$) |
| Exchange capacity | 0.4 mmol/g |

Application: EVOLUTE® WCX can be used to extract strongly basic analytes (e.g. quaternary amines) from biological fluids and other aqueous matrices. Performance is not adversely affected by drying the sorbent.

EVOLUTE EXPRESS WCX Tableless SPE Columns

| Part Number | Description | Qty. |
|--------------|---------------------------------|------|
| 602-0001-AXG | EVOLUTE EXPRESS WCX 10 mg/1 mL | 100 |
| 602-0003-AXG | EVOLUTE EXPRESS WCX 30 mg/1 mL | 100 |
| 612-0006-BXG | EVOLUTE EXPRESS WCX 60 mg/3 mL | 50 |
| 612-0015-CXG | EVOLUTE EXPRESS WCX 150 mg/6 mL | 30 |
| 612-0050-CXG | EVOLUTE EXPRESS WCX 500 mg/6 mL | 30 |

EVOLUTE EXPRESS WCX 96-well SPE Plates

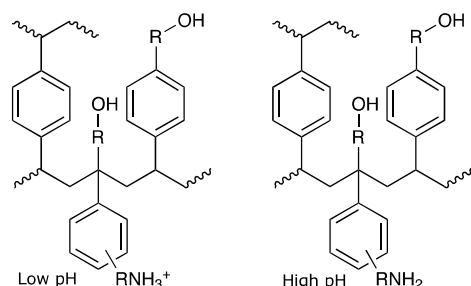
| Part Number | Description | Qty. |
|---------------|---------------------------------|------|
| 602-0010-PX01 | EVOLUTE EXPRESS WCX 10 mg Plate | 1 |
| 602-0030-PX01 | EVOLUTE EXPRESS WCX 30 mg Plate | 1 |

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EVOLUTE® EXPRESS

Load-Wash-Elute SPE

EVOLUTE® WAX



Chemical structure of EVOLUTE® WAX

Chemical Description:

Primary-secondary amine modified polystyrene-divinylbenzene incorporating non-ionizable hydroxyl groups.

| | |
|-----------------------|---|
| Average particle size | 30 μm , 50 μm |
| Pore diameter | 40 \AA |
| Sorbent Type | Mixed-mode non-polar/weak anion exchange ($\text{pK}_a \sim 5$) |
| Exchange capacity | 0.3 mmol/g, 0.7 mmol/g |

Application: EVOLUTE® WAX can be used to extract strongly acidic analytes (e.g. sulfonic acids) from biological fluids and other aqueous matrices. Performance is not adversely affected by drying the sorbent.

EVOLUTE EXPRESS WAX Tableless SPE Columns

| Part Number | Description | Qty. |
|--------------|---------------------------------|------|
| 604-0001-AXG | EVOLUTE EXPRESS WAX 10 mg/1 mL | 100 |
| 604-0003-AXG | EVOLUTE EXPRESS WAX 30 mg/1 mL | 100 |
| 614-0006-BXG | EVOLUTE EXPRESS WAX 60 mg/3 mL | 50 |
| 614-0015-CXG | EVOLUTE EXPRESS WAX 150 mg/6 mL | 30 |
| 614-0050-CXG | EVOLUTE EXPRESS WAX 500 mg/6 mL | 30 |

EVOLUTE EXPRESS WAX 96-well SPE Plates

| Part Number | Description | Qty. |
|---------------|---------------------------------|------|
| 604-0010-PX01 | EVOLUTE EXPRESS WAX 10 mg Plate | 1 |
| 604-0030-PX01 | EVOLUTE EXPRESS WAX 30 mg Plate | 1 |

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