



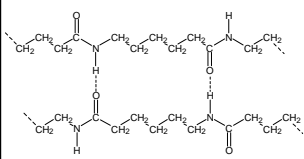
Discovery Reversed-Phase SPE Products

Base Silica: Irregular shaped, acid washed; 50µm particle size, 70Å pore diameter, 480m²/g specific surface area, 0.9cm³/g pore volume

Discovery reversed-phase SPE products are specifically developed, tested and quality controlled for pharmaceutical and clinical applications. Experience greater and more reproducible recoveries for the quick and effective extraction, isolation, and concentration of pharmaceuticals from biological fluids and other aqueous sample matrices.

- Switches sample matrices and protects the analytical column/instrument from unwanted sample matrix components
- Concentrates target analyte(s) and removes background interferences for increased sensitivity and accuracy
- Improve extraction selectivity through Discovery's narrower pore size distribution
- Acid washed to reduced metal chelating activity

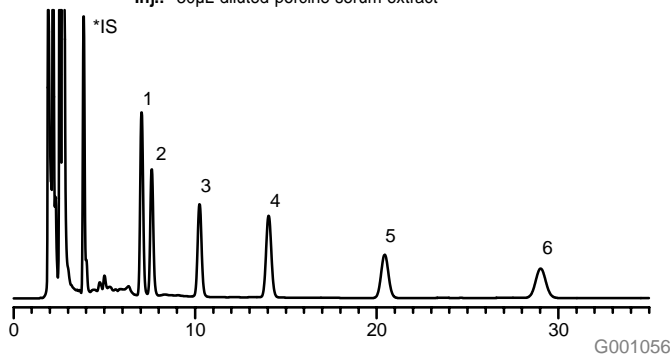
A comprehensive line of reversed-phase chemistries (six different SPE chemistries) and hardware configurations (including 96-well plates) to meet your diverse and most demanding sample prep needs.

<p>DSC-18</p> $\begin{array}{c} \\ \text{--- Si ---} \\ \end{array} \text{ (CH}_2\text{)}_{17}\text{CH}_3$ <p style="text-align: right; font-size: small;">G001625</p>	<ul style="list-style-type: none"> – Polymerically bonded, octadecyl (18% C), endcapped – Higher 18% C loading for increased binding capacities and higher recoveries – The least selective phase: retains most organic analytes from aqueous matrices – Beneficial for extracting numerous analytes diverse in structure from the same sample
<p>DSC-18Lt</p> $\begin{array}{c} \\ \text{--- Si ---} \\ \end{array} \text{ (CH}_2\text{)}_{17}\text{CH}_3$ <p style="text-align: right; font-size: small;">G001633</p>	<ul style="list-style-type: none"> – Monomerically bonded, octadecyl (11% C), endcapped – Increased retention for moderately polar hydrophobic molecules – Used to elute very large hydrophobic molecules that are too strongly retained on DSC-18. Use this less retentive phase for the rapid release of hydrophobic compounds using weaker organic solvents at lower volumes
<p>DSC-8</p> $\begin{array}{c} \\ \text{--- Si ---} \\ \end{array} \text{ (CH}_2\text{)}_7\text{CH}_3$ <p style="text-align: right; font-size: small;">G001624</p>	<ul style="list-style-type: none"> – Monomerically bonded, Octyl (9% C), endcapped; lower carbon content than DSC-18Lt – Used to elute very large hydrophobic molecules too strongly retained on DSC-18 or DSC-18Lt – Use this less retentive phase for the rapid release of hydrophobic molecules using weaker organic solvents at lower volumes
<p>DSC-Ph</p> $\begin{array}{c} \\ \text{--- Si ---} \\ \end{array} \text{---} \text{C}_6\text{H}_5$ <p style="text-align: right; font-size: small;">G001628</p>	<ul style="list-style-type: none"> – Monomerically bonded, Phenyl (7% C), endcapped – Similar in polarity to DSC-8; however, electron dense aromatic ring offers some unique selectivity and retention
<p>DSC-CN</p> $\begin{array}{c} \\ \text{--- Si ---} \\ \end{array} \text{ (CH}_2\text{)}_3\text{CN}$ <p style="text-align: right; font-size: small;">G001626</p>	<ul style="list-style-type: none"> – Monomerically bonded, Cyanopropyl (7% C), endcapped – Can behave as either reversed phase or normal phase – Ideal for very hydrophobic analytes that may be irreversibly retained on more hydrophobic sorbents such as DSC-18 – Less retentive than DSC-Si or DSC-Diol when used as normal phase (organic matrices such as hexane or oils) – Allows for the rapid release of very polar molecules irreversibly retained on very polar sorbents
<p>DPA-6S</p>  <p style="text-align: right; font-size: small;">G001195</p>	<ul style="list-style-type: none"> – Polyamide Resin: Particle Size: 50-160µm, Surf pH: 4.5-7.5, Density: 0.2-0.3cm³/g, Water Content: < 5% – Used to adsorb polar compounds (-OH groups, esp. phenolic compounds) from aqueous or methanolic solutions under the reversed phase mechanism through strong hydrogen bonding between compound hydroxyl groups and amide groups of the resin – Useful for extracting tannins, chlorophyll, humic acid, pharmacologically active terpenoids, flavanoids, gallic acid, catechol A protocatechuic acid, and phloroglucinol – Also useful for extracting aromatic carboxylic acids, nitroaromatic compounds, and irreversibly retains quinones

Here's the Proof:

Barbiturates from Serum using Zymark RapidTrace SPE Workstation

SPE Tube: Discovery DSC-18Lt, 500mg/3mL
HPLC Column: Discovery C18, 15cm x 4.6mm, 5µm particles, preceded by a 2cm C18 guard column and 0.5µm frit filter.
Mobile Phase: MeOH / H₂O (40:60)
Flow Rate: 1mL/min
Temp.: 30°C
Det.: UV, 214nm
Inj.: 30µL diluted porcine serum extract



Barbiturates from serum using 500mg/3mL Discovery DSC-18Lt SPE tubes and Zymark's RapidTrace SPE Workstation. *IS = Barbitol (internal standard).

Sample Info: 0.5mL porcine serum spike with 0.5µg/mL or 1.0µg/mL each analyte then diluted with 0.5mL water.

Efficiency of Recovery

Compound	Concentration (µg/mL)	%Recovery	%RSD (n=6)
1. Phenobarbital	0.5	96.2	±1.6
	1.0	94.9	±1.7
2. Aprobarrbital	0.5	98.5	±2.1
	1.0	100.8	±0.8
3. Butabarrbital	0.5	97.2	±1.9
	1.0	98.7	±1.8
4. Mephobarbital	0.5	99.7	±2.4
	1.0	101.0	±2.0
5. Pentobarbital	0.5	96.4	±1.7
	1.0	96.4	±1.9
6 Secobarbital	0.5	98.2	±1.7
	1.0	97.7	±1.8

SPE Method For RapidTrace SPE Workstation Application

- Condition & equilibrate each tube/well with 2mL MeOH & 2mL DI Water
- Load Sample
- Wash each tube/well with 2mL 5% MeOH
- Vacuum or air dry with for 5-10 min
This removes any excess water from the sorbent. The presence of water in the final eluent may prolong eluent evaporation.
- Elute with 1-2mL MeOH
- Dry eluate with nitrogen purge (40°C; 15-20 min)
- Reconstitute with 200µL mobile phase
- Quantify against internal or external standards via HPLC analyses

Ordering Information:

Discovery Reversed-Phase SPE Products

Product	Qty./Pk	DSC-18	DSC-18Lt	DSC-8	DSC-Ph	DSC-CN	DPA-6S
Discovery SPE Tubes							
50mg/1mL	108 qty/pk	52601-U	52610-U	52703-U	52723-U	52693-U	52624-U
100mg/1mL	108 qty/pk	52602-U	52611-U	52707-U	52725-U	52694-U	Not Available
500mg/3mL	54 qty/pk	52603-U	52613-U	52713-U	52727-U	52695-U	⁴ 52625-U
500mg/6mL	30 qty/pk	52604-U	52615-U	52714-U	52728-U	52696-U	⁵ 52626-U
1g/6mL	30 qty/pk	52606-U	52616-U	52716-U	52731-U	52697-U	⁶ 52627-U
2g/12mL	30 qty/pk	52607-U	52618-U	52717-U	Custom	52698-U	⁷ 52629-U
5g/20mL	20 qty/pk	52608-U	52621-U	52718-U	Custom	52699-U	⁸ 52631-U
10g/60mL	20 qty/pk	52609-U	52622-U	52722-U	Custom	52700-U	⁹ 52632-U
Bulk packing	100g	52600-U	52623-U	52723-U	52727-U	52722-U	¹⁰ 52633-U
Discovery SPE-96 Well Plates							
100mg/well	1 ea	575603-U	575606-U	575627-U	575630-U	575624-U	Custom
50mg/well	1 ea	575602-U	575605-U	575628-U	575631-U	575625-U	Custom
25mg/well	1 ea	575601-U	575604-U	575629-U	575632-U	575626-U	Custom
Discovery Büchner Funnels							
110mm ID x 66mm H, 50g	1 qty/pk	Custom	Custom	Custom	Custom	Custom	52634-U

⁴ 250mg/3mL, ⁵ 250mg/6mL, ⁶ 500mg/6mL, ⁷ 1g/12mL, ⁸ 2g/20mL, ⁹ 5g/60mL, ¹⁰ 50g

Trademark

Discovery is a trademark of Sigma-Aldrich Co.

sigma-aldrich.com/supelco

Order/Customer Service 800-247-6628, 800-325-3010 • Fax 800-325-5052 • E-mail supelco@sial.com
 Technical Service 800-359-3041, 814-359-3041 • Fax 800-359-3044, 814-359-5468 • E-mail techservice@sial.com
 SUPELCO • Supelco Park, 595 North Harrison Road, Bellefonte, PA 16823-0048 • 814-359-3441



We are committed to the success of our Customers, Employees and Shareholders through leadership in Life Science, High Technology and Service.

The SIGMA-ALDRICH Family



T402053
ESV

© 2002 Sigma-Aldrich Co. Printed in USA. Supelco brand products are sold through Sigma-Aldrich, Inc. Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.