



Agilent Technologies

Agilent Bond Elut C18

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Biologics and biosimilars

[o-Phthalaldehyde–N-acetylcysteine polyamine derivatives: formation and stability in solution and in C18 supports](#)

Sciences and Applications, **759**, 265-297 (2001)
P. Campíns-Falcó *et al.*

Tags

Bond Elut PPL, Bond Elut C2, C8 and C18,
Bond Elut Certify, biologics and biosimilars,
physicochemical characterization

Abstract

On SPE derivatization of polyamines with OPA, Agilent Bond Elut C18 was the best although recovery could be improved. Published by Elsevier B. V.

Environmental

[Determination of 61 organic pollutants in drinking water by solid phase extraction followed by liquid and gas chromatography coupled to tandem mass spectrometry: an analytical strategy for a routine laboratory](#)

International Journal of Environmental Analytical Chemistry, **93**, 707-726 (2013)
Georgina Fortuny *et al.*

Tags

Bond Elut Plexa, Bond Elut PPL, Bond Elut ENV,
Bond Elut C18, VF-5ms, environmental, water
analysis

Abstract

A method for determination of 61 organic pollutants (polycyclic aromatic hydrocarbons and organochlorine, organophosphorus and organonitrogen pesticides) is proposed. It is based on solid phase extraction (SPE) and subsequent analysis of the extract by liquid and gas chromatography coupled to tandem mass spectrometry. Method validation yielded to the following values: limits of quantification, from 0.005 to 0.020 $\mu\text{g L}^{-1}$; trueness, 95% to 113% and reproducibility (as percent relative standard deviation), 2% to 15%. Additionally, the method performed well in various proficiency tests. ©2012 Taylor & Francis.

[Improved extraction and clean-up of imidazolinone herbicides from soil solutions using different solid-phase sorbents](#)

Journal of Chromatography A, **1216**, 5092-5100
(2009)
Mohammadkazem Ramezani *et al.*

Tags

Bond Elut PPL, Bond Elut C18, Bond Elut SCX,
1100 Series, environmental, soil, sludges and
sediments

Abstract

The authors used a range of Agilent Bond Elut cartridges to improve extraction and cleanup of herbicides from soils. Bond Elut PPL was particularly effective. Published by Elsevier B. V.

[Development of EPA Method 525.3 for the analysis of semivolatiles in drinking water](#)

Analytical Methods, **5**, 151-163 (2013)
Paul E. Grimmett, Jean W. Munch

Tags

Bond Elut LMS, Bond Elut C18, environmental,
water analysis

Abstract

Agilent Bond Elut LMS and Bond Elut C18 were used for SPE in an independent lab study of US EPA Method 525.3. Published by the Royal Society of Chemistry.

[Development of a solid phase extraction method for agricultural pesticides in large-volume water samples](#)

Talanta, **81**, 1380-1386 (2010)
Georges-Marie Momplaisir *et al.*

Tags

Bond Elut PPL, Bond Elut C18,
Bond Elut NEXUS, 6890A GC, 5973N MSD,
environmental, water analysis

Abstract

Agilent Bond Elut NEXUS in bulk, i.e. 8 g for a 100 L water sample, was used to extract pesticides from large volumes of water. Agilent Bond Elut PPL and Bond Elut C18 were also used. Published by Elsevier B. V.

[Ion-pair solid-phase extractive derivatization of 4-alkylphenols with pentafluoropyridine for gas chromatography–mass spectrometry](#)

Journal of Chromatography A, **1078**, 1-6 (2005)
Miki Kojima *et al.*

Tags

Bond Elut ENV, Bond Elut C18, environmental, water analysis

Abstract

Agilent Bond Elut cartridges were used for a novel ion-pair SPE extraction of 4-alkylphenols from river water. Published by Elsevier B. V.

[Dynamic Preconcentration of Organic Substances on Nonpolar Adsorbents](#)

Journal of Analytical Chemistry, **58**, 398-422
(2003)
O. A. Filippov *et al.*

Tags

Bond Elut PPL, Bond Elut C18, Bond Elut C8, environmental, water analysis

Abstract

In a review of extractions from water, the authors report that disks offer better flow rates with large volume water samples. Published by Springer.

[Determination of Commonly Used Herbicides in Surface Water Using Solid-Phase Extraction and Dual-Column HPLC-DAD](#)

Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes, **40**, 827-840 (2005)
Gül Özhan, Sibel Özden, Buket Alpertunga

Tags

Bond Elut ENV, Bond Elut C18, Vac Elut 20, environmental, water analysis

Abstract

The present study describes the application of different solid-phase extraction techniques for the extraction, separation, and quantitative determination of 10 commonly used herbicides with different chemical structures (chlorsulfuron, diuron, bentazone, linuron, chlorpropham, fenoxoprop-ethyl, MCPA, diclofop-methyl, fluazifop-butyl, trifluraline) in water. Octadecyl (C₁₈) Empore extraction disks, octadecyl (C₁₈), and styrene divinylbenzene (SDB) Bond Elut Env cartridges were compared for solid-phase extraction efficiency. Herbicides were separated and quantified by reversed-phase high performance liquid chromatography with diode-array detection (HPLC-DAD) with simultaneous separation on two columns of differing polarity (C₁₈ and CN) to confirm identification. Analytical separation was performed simultaneously on C₁₈ and CN columns. Reanalysis of the sample extracts on a (cyano) CN column were used to confirm the identity of these compounds. Method optimization and validation parameters were presented in this work. Recoveries varied from 76.0% to 99.0% for C₁₈ disks, from 75.1% to 100.0% for C₁₈ cartridges, and from 54.0% to 98.0% for SDB cartridges over concentrations at 0.025–0.4 µg L⁻¹. The limits of detection were 0.012–0.035 µg L⁻¹. ©2005 Taylor & Francis.

[Derivatization on Solid Supports: An Alternative Method for Solution Derivatization of Amines in Several Matrices](#)

Chromatographia, **58**, 15-27 (2003)
C. Molins Legua, P. Campíns-Falcó, S. Meseguer Lloret

Tags

Bond Elut PPL, Bond Elut C18, Bond Elut Certify, Bond Elut SCX, environmental, water analysis

Abstract

Agilent Bond Elut C18 gave the best results in this effective application of derivatizing aliphatic and biogenic amines on SPE versus solution derivatization. Published by Springer.

[Comparative study of C18- and styrene-divinylbenzene-based sorbents for the enrichment of phenols from water](#)

Journal of Liquid Chromatography & Related Technologies, **24**, 1295-1308 (2001)
P. Campíns-Falcó *et al.*

Tags

Bond Elut PPL, Bond Elut C18, Empore Disk SPE, environmental, water analysis

Abstract

The potential of solid-phase extraction with C18- and styrene divinylbenzene-based sorbents for the preconcentration of phenols from water samples has been evaluated for a variety of phenols of different polarities: phenol, o-, m- and p-cresol, 2-chlorophenol, and 4-chloro-3-methylphenol. The extraction efficiencies have been calculated for different volumes of samples containing the analytes at different concentration levels. The UV limits of detection were of 1–5 ng/mL, for the method using Bond Elut C18 cartridges and sample volumes of 25 mL, and 0.05–0.1 ng/mL (except for 4-chloro-3-methylphenol) for the method using the polymeric sorbent Bond Elut PPL and 1000 mL of the samples. Possible applications of each method are discussed in view of the enrichment factors that can be reached. ©2001 Taylor & Francis.

[Selection of SPE cartridge for automated solid-phase extraction of pesticides from water followed by liquid chromatography-tandem mass spectrometry](#)

Analytical and Bioanalytical Chemistry, **394**, 2257-226 (2009)
Timothy B. Jordan, David S. Nichols, Neil I. Kerr

Tags

Bond Elut PPL, Bond Elut LRC C18, EnvirElut, Bond Elut Carbon, Bond Elut ENV, Polaris C18-A, environmental, water analysis

Abstract

Agilent Bond Elut PPL gave the best results with automated Gilson ASPEC extraction of pesticides from water. Published by Springer.

[Molecular mapping of sorbent selectivities with respect to isolation of arctic dissolved organic matter as measured by Fourier transform mass spectrometry](#)

Environmental Science & Technology, **48**, 7461–
7468, (2014)
Irina V. Perminova *et al.*

Tags

Bond Elut PPL, Bond Elut C18, environmental,
water analysis

Abstract

The objectives of this study were to identify molecular features characteristic to arctic DOM from the Kolyma River basin and to elucidate structural imprints induced by a choice of the sorption technique. To achieve this goal, DOM was isolated from the Kolyma River basin with a use of three nonionic sorbents: Amberlite XAD-8 resin, PPL- and C18 - SPE cartridges, and one anion exchanging resin—diethylaminoethyl (DEAE) -cellulose. The structural studies were conducted with a use of electrospray ionization Fourier Transform Ion Cyclotron Resonance (ESI FT-ICR) mass spectrometry and liquid state ¹H NMR spectroscopy. The DOM isolates obtained with a use of PPL and C18 cartridges were characterized with higher content of aliphatic compounds as compared to XAD-8 and DEAE-isolates. In total, for all arctic DOM isolates we observed predominance of hydrogen saturated compounds with high H/C values of identified formulas from FT-ICR MS data. ¹H NMR spectroscopy studies have confirmed this trend and revealed high contribution of alkyl-chain protons into the spectral density of the arctic DOM reaching 43% for PPL isolates. Reprinted with permission from Environmental Science & Technology. Copyright 2014 American Chemical Society.

[A simple and efficient method for the solid-phase extraction of dissolved organic matter \(SPE-DOM\) from seawater](#)

Limnology and Oceanographic Methods **6**, 230–
235 (2008)
Thorsten Dittmar *et al.*

Tags

Bond Elut ENV, Bond Elut C18,
Bond Elut C18EWP, Bond Elut C18 OH,
Bond Elut C8, Bond Elut PPL, environmental,
water analysis

Abstract

The authors present a simple protocol for the solid-phase extraction of dissolved organic matter (SPE-DOM) from seawater using Agilent Bond Elut prepacked cartridges. Published by the American Society of Limnology and Oceanography, Inc.

Food testing and agriculture

[Analytical strategies to determine antibiotic residues in fish](#)

Journal of Separation Science, **30**, 2549-2569
(2007)
Victoria F. Samanidou, Evaggelia N.
Evangelopoulou

Tags

Bond Elut ENV, Bond Elut C18,
ZORBAX Eclipse XDB-Phenyl, food testing and
agriculture, pesticides

Abstract

This article is an extended and comprehensive review of recent analytical methods for antibiotic residues in fish, mentioning Agilent Bond Elut ENV and Bond Elut C18 cartridges for cleanup, with ZORBAX Eclipse XDB-Phenyl columns for HPLC analysis. Published by John Wiley and Sons.

[Influence of fructooligosaccharides and garlic on formation of heterocyclic amines in fried ground beef patties](#)

Food Science and Biotechnology, **19**, 1159-1164
(2010)
Kyunghee Jung *et al.*

Tags

Chem Elut, Bond Elut C18, ZORBAX Rx-C18,
1100 Series LC, food testing and agriculture

Abstract

Agilent Chem Elut and Bond Elut C18 sorbents were used to extract HCAs, which were then analyzed on an Agilent 1100 Series LC fitted with an Agilent ZORBAX Rx-C18 column. Published by Springer.

[Simple strategy for the optimization of solid-phase extraction procedures through the use of solid–liquid distribution coefficients: Application to the determination of aliphatic lactones in wine](#)

Journal of Chromatography A, **1025**, 147-156
(2004)
Vicente Ferreira *et al.*

Tags

Bond Elut LMS, Bond Elut ENV, Bond Elut C18, Vac Elut 20, DB-WAXetr, DB-20, 5890 GC, food testing and agriculture, food authenticity

Abstract

Agilent Bond Elut ENV was the best SPE for selectivity from interferences over other vendor products and silica. This excellent paper spells out how to optimize and choose the best SPE material, using the Agilent Vac Elut 20 extraction manifold. GC analyses were accomplished using Agilent J&W DB-20 and DB-WAXetr columns. Published by Elsevier B. V.

[A high-performance liquid chromatography/tandem mass spectrometric screening method for eight synthetic corticosteroids in bovine feces and the simultaneous differentiation between dexamethasone and betamethasone](#)

Rapid Communications in Mass Spectrometry,
16, 1590-1594 (2002)
J. P. Noben *et al.*

Tags

Bond Elut C18, Bond Elut SI, food testing and agriculture, persistent organic pollutants

Abstract

Agilent Bond Elut C18 and Bond Elut Si cartridges were used for the extraction of steroids. Published by John Wiley & Sons Ltd.

[Formation of heterocyclic amines during cooking of duck meat](#)

Food Additives & Contaminants: Part A, **29**,
1668-1678 (2012)
G. Z. Liao *et al.*

Tags

Bond Elut PRS, Bond Elut C18, 1100 Series LC,
food testing and agriculture, food processing

Abstract

Heterocyclic amines (HAs) are an important class of food mutagens and carcinogens produced in meat cooked at high temperature. In the present study, the effects of various cooking methods: boiling, microwave cooking, charcoal-grilling, roasting, deep-frying and pan-frying on the formation of HAs in duck breast were studied. The various HAs formed during cooking were isolated by solid-phase extraction and analysed by HPLC. Results showed that both the varieties and contents of HAs and the cooking loss of duck breast increase along with increasing cooking temperature and time. Pan-fried duck breasts contained the highest amount of total HAs, followed by charcoal-grilling, deep-frying, roasting, microwave cooking and boiling. 9H-pyrido[3,4-b]indole (norharman) and 1-methyl-9H-pyrido[3,4-b]indole (harman) were detected in all of the cooked duck meat, with levels in the range of 0.1–33 ng g⁻¹. 2-Amino-1-methyl-6-phenylimidazo[4,5-f]pyridine (PhIP) was formed easily in duck meat cooked by pan-frying and charcoal-grilling in the range of 0.9–17.8 ng g⁻¹. 2-Amino-3-methylimidazo[4,5-f]quinoline (IQ) was identified in duck meat cooked by charcoal-grilling and pan-frying, in the range of 0.4–4.2 ng g⁻¹. 2-Amino-3,8-dimethyl-imidazo[4,5-f]quinoxaline (MeIQx) was detected in amounts below 4.5 ng g⁻¹ in duck meat cooked by charcoal-grilling, roasting, deep-frying and pan-frying. The other HAs were detected in amounts below 10 ng g⁻¹. Colour development increased with cooking temperature, but no correlation with HAs' content was observed. ©2012 Taylor & Francis.

[Inhibitory Effect of Antioxidant-Rich Marinades on the Formation of Heterocyclic Aromatic Amines in Pan-Fried Beef](#)

Journal of Agricultural and Food Chemistry, **60**,
6235-6240 (2012)
Olga Viegas *et al.*

Tags

Bond Elut PRS, Bond Elut C18, food testing and
agriculture, food processing

Abstract

The inhibitory effect of antioxidant-rich marinades containing beer and white wine (with/without alcohol) alone or mixed with herbs commonly used as meat flavoring (garlic, ginger, thyme, rosemary, and red chili pepper) on the formation of heterocyclic aromatic amines (HAs) in pan-fried beef was studied. Radical-scavenging activity was evaluated by DPPH assay, before the addition of meat to the marinade (T0) and after 4 h of meat marinating (T4). At T0, wine with herbs possessed the highest scavenging activity (73.5%), followed by wine (72.5%), dealcoholized wine with herbs (53.4%), beer and herbs (41.7%), dealcoholized wine (39.6%), and beer (25.9%). At T4, a decrease in the radical-scavenging activity of all marinades was observed, although with a similar radical-scavenging profile. All of the six marinades under the study reduced the total amount of HAs, keeping meat with good overall sensory quality. Beer marinades were more efficient than white wine marinades, and the addition of herbs provided a superior inhibitory effect, reducing around 90% of HAs. No correlation was observed between radical-scavenging activity of marinades and total or individual HAs formation. Herbs explained around 30% of inhibition of PhIP formation, whereas alcohol increased PhIP formation. Reprinted with permission from the Journal of Agricultural and Food Analytical Chemistry © 2012 American Chemical Society.

Small molecule pharmaceuticals

[In Vitro Leishmanicidal Activity of Benzophenanthridine Alkaloids from *Bocconia pearcei* and Related Compounds](#)

Chemical and Pharmaceutical Bulletin, **8**,
1047-1050 (2010)
Hiroyuki Fuchino *et al.*

Tags

Bond Elut Alumina, Bond Elut C18, small
molecule pharmaceuticals, drug discovery

Abstract

Agilent Bond Elut SPE products were used for the purification of plant alkaloids. Published by the Pharmaceutical Society of Japan.

[A simple assay for the simultaneous determination of human plasma albendazole and albendazole sulfoxide levels by high performance liquid chromatography in tandem mass spectrometry with solid-phase extraction](#)

Clinica Chimica Acta, **426**, 58-63 (2013)
Aneta Wojnicz *et al.*

Tags

Bond Elut C18, ZORBAX Eclipse XDB CN, 1200 Infinity Series, 6410 Triple Quadrupole LC/MS, clinical research, small molecule pharmaceuticals, plasma

Abstract

A fast method for the detection of anthelmintic in plasma used Agilent Bond Elut C18 for sample prep and ZORBAX XDB CN HPLC columns on an Agilent 1200 Infinity Series with a 6410 Triple Quadrupole LC/MS. Published by Elsevier B. V.

[A comparison of quantitative NMR and radiolabelling studies of the metabolism and excretion of Statil™ \(3-\(4-bromo-2-fluorobenzyl\)-4-oxo-3H-phthalazin-1-ylacetic acid\) in the rat](#)

Analysis, **28**, 31-43 (2002)
E. M. Lenz *et al.*

Tags

Bond Elut SPEC, Bond Elut C18, small molecule pharmaceuticals

Abstract

The authors identified a unique NMR application that might offer a new avenue for sample prep. Published by Elsevier B. V.

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