



Agilent Technologies

Agilent J&W DB-WAX

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Energy and chemicals

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Chemosphere, **90**, 1508-1513 (2013)
E. E. Kwon *et al.*

Tags
DB-5ht, DB-WAX, 7890A, GC, 5975C MSD,
energy and chemicals, biofuels and alternative
energy

Abstract

Lipids from sewage sludge were converted into biodiesel via transesterification and assayed with Agilent J&W GC columns and GC/MS instruments. Published by Elsevier B. V.

[Used frying oil for biodiesel production over kaolinite as catalyst](#)

*International Journal of Chemical and Biological
Engineering*, **4**, 35-38 (2011)
Jorge Ramírez-Ortiz *et al.*

Tags
DB-WAX, 6890N GC, energy and chemicals,
biofuels and alternative energy

Abstract

Biodiesel production with used frying fat by transesterification reaction with methanol, using a commercial kaolinite thermally-activated solid acid catalyst was investigated. The surface area, the average pore diameter and pore volume of the kaolinite catalyst were 10 m²/g, 13.0 nm and 30 mm³/g, respectively. The optimal conditions for the transesterification reaction were determined to be oil/methanol, in a molar ratio 1:31, temperature 160 °C and catalyst concentration of 3% (w/w). The yield of fatty acid methyl esters (FAME) was 92.4% after 2 h of reaction. This method of preparation of biodiesel can be a positive alternative for utilizing used frying corn oil for feedstock of biodiesel combined with the inexpensive catalyst.

[Robust and sensitive analysis of methanol and ethanol from cellulose degradation in mineral oils](#)

Journal of Chromatography A, **1256**, 240-245
(2012)
Jocelyn Jalbert *et al.*

Tags
VF-624ms, DB-WAX, DB-624, 7890A GC, 5975C
MS, energy and chemicals, power generation

Abstract

Method parameters for the analysis of cellulose-derived methanol and ethanol were developed on a range of Agilent J&W GC columns of differing polarity. Published by Elsevier B. V.

Environmental

[Full evaporation dynamic headspace and gas chromatography–mass spectrometry for uniform enrichment of odor compounds in aqueous samples](#)

Journal of Chromatography A, **1240**, 59-68
(2012)
Nobuo Ochiai *et al.*

Tags
DB-5, DB-WAX, 5975T LTM Column Module,
7890 GC, 5975C MSD, environmental, air
analysis

Abstract

FEDHS was superior to standard dynamic headspace sampling in an investigation of odor compounds in water. Agilent J&W GC columns and a low thermal mass (LTM) module were employed. Published by Elsevier B. V.

[Comprehensive analysis of the toxic and refractory pollutants in acrylonitrile–butadiene–styrene resin manufacturing wastewater by gas chromatography spectrometry with a mass or flame ionization detector](#)

Journal of Chromatography A, **1244**, 161-167
(2012)
Bo Lai *et al.*

Tags
DB-WAX, HP-5ms, 7890 GC, 5975 MS,
environmental, water analysis

Abstract

Agilent J&W GC columns and instruments were used to detect and confirm the identity of 37 compounds in wastewater from ABS resin manufacturing. Published by Elsevier B. V.

[Occurrence and distribution of benzothiazole in the Schwarzbach watershed \(Germany\)](#)

Journal of Environmental Monitoring, **13**, 2838-
2843 (2011)
Elke Fries, Tilman Gocht, Jörg Klasmeier

Tags
Bond Elut PPL, DB-WAX, 6890N GC,
environmental, emerging contaminants

Abstract

The authors used Agilent Bond Elut PPL as an analyte concentrator from a large volume of water for benzothiazole, with a check for breakthrough and analytical recoveries. Analysis was accomplished using an Agilent J&W DB-WAX column in an Agilent 6890 GC. Published by the Royal Institute for Chemistry.

[Study To Elucidate Formation Pathways of Selected Roast-Smelling Odorants upon Extrusion Cooking](#)

Journal of Agricultural and Food Chemistry, **61**,
10215–10219 (2013)
Tomas Davidek *et al.*

Tags
DB-5ms Ultra Inert, DB-1701, DB-WAX, 7890A
GC, environmental, air analysis

Abstract

The formation pathways of the N-containing roast-smelling compounds 2-acetyl-1-pyrroline, 2-acetyl-1(or 3),4,5,6-tetrahydropyridine, and their structural analogues 2-propionyl-1-pyrroline and 2-propionyl-1(or 3),4,5,6-tetrahydropyridine were studied upon extrusion cooking using the CAMOLA approach. The samples were produced under moderate extrusion conditions (135 °C, 20% moisture, 400 rpm) employing a rice-based model recipe enriched with flavor precursors ([U-13C6]-d-glucose, d-glucose, glycine, l-proline, and l-ornithine). The obtained data indicate that the formation of these compounds upon extrusion follows pathways similar to those reported for nonsheared model systems containing d-glucose and l-proline. 2-Acetyl-1-pyrroline is formed (i) by acylation of 1-pyrroline via C2 sugar fragments (major pathway) and (ii) via ring-opening of 1-pyrroline incorporating C3 sugar fragments (minor pathway), whereas 2-propionyl-1-pyrroline incorporates exclusively C3 sugar fragments. 2-Acetyl-1(or 3),4,5,6-tetrahydropyridine and the corresponding propionyl analogue incorporate C3 and C4 sugar fragments, respectively. In addition, it has been shown that the formation of 2-acetyl-1-pyrroline in low-moisture systems depends on the pH value of the reaction mixture. Reprinted with permission from the Journal of Agricultural and Food Chemistry. ©2013 American Chemical Society.

Food testing and agriculture

[Arbuscular mycorrhizal fungi associated with *Artemisia umbelliformis* Lam, an endangered aromatic species in Southern French Alps, influence plant P and essential oil contents](#)

Mycorrhiza, **21**, 523-535 (2011)
Marie-Noëlle Binet *et al.*

Tags
DB-5ms UI, DB-WAX, 6890N GC, 5973 MSD,
food testing and agriculture, dietary
supplements, natural compounds and additives

Abstract

Essential oils from artemisia were analyzed using Agilent J&W DB-5ms Ultra Inert and DB-WAX GC columns fitted to an Agilent 6890N GC with 5973 MSD. Published by Springer.

[Identification and Behavioral Evaluation of Sex Pheromone Components of the Chinese Pine Caterpillar Moth, *Dendrolimus tabulaeformis*](#)

PLoS ONE, **7** (2012)
Xiang-Bo Kong *et al.*

Tags

DB-5ms, DB-WAX, 7890 GC, food testing and agriculture, pesticides

Abstract

Sex pheromone was collected from calling female *D. tabulaeformis* by headspace solid phase microextraction (SPME) and by solvent extraction of pheromone glands. Extracts were analyzed by coupled gas chromatography/mass spectrometry (GC-MS) and coupled GC-electroantennographic detection (GC-EAD), using antennae from male moths. Five components from the extracts elicited antennal responses. These compounds were identified by a combination of retention indices, electron impact mass spectral matches, and derivatization as (*Z*)-5-dodecenyl acetate (*Z*5-12:OAc), (*Z*)-5-dodecenyl alcohol (*Z*5-12:OH), (*5Z,7E*)-5,7-dodecadien-1-yl acetate (*Z*5,*E*7-12:OAc), (*5Z,7E*)-5,7-dodecadien-1-yl propionate (*Z*5,*E*7-12:OPr), and (*5Z,7E*)-5,7-dodecadien-1-ol (*Z*5,*E*7-12:OH). Behavioral assays showed that male *D. tabulaeformis* strongly discriminated against incomplete and aberrant blend ratios. The correct ratio of *Z*5,*E*7-12:OAc, *Z*5,*E*7-12:OH, and *Z*5,*E*7-12:OPr was essential for optimal upwind flight and source contact. The two monoenes, *Z*5-12:OAc and *Z*5-12:OH, alone or binary mixtures, had no effect on behavioral responses when added to the optimal three-component blend. ©The Authors.

[Purification of vetiver alcohols and esters for quantitative high-performance thin-layer chromatography determination in Haitian vetiver essential oils and vetiver acetates](#)

Journal of Chromatography A, **1241**, 103-111
(2012)
Lionel Paillat *et al.*

Tags

VF-WAXms, VF-1ms, DB-WAX, CP-Sil 5 CB, CP-WAX 52 CB, 7890 GC, 5975C MSD, 6890N GC, 5973N MS, food testing and agriculture, dietary supplements, natural compounds and additives

Abstract

GC/MS and comprehensive GC x GC/MS analysis, using a range of Agilent J&W columns fitted to different Agilent GC/MS systems, was used to quantify alcohols and acetates in Haitian vetiver essential oils. Published by Elsevier B. V.

[Rapid analysis of cyclamate in foods and beverages by gas chromatography-electron capture detector \(GC-ECD\)](#)

Food Chemistry, **134**, 2424-2429 (2012)
Shengbing Yu *et al.*

Tags
HP-5, DB-5ms, DB-WAX, 6890N GC, 7683B
Autosampler, food testing and agriculture, food processing and packaging

Abstract

Several Agilent J&W GC columns, fitted to an Agilent 6890N/5973 MSD, were used in a successful investigation of artificial sweeteners in food. Published by Elsevier B. V.

[Regional sensory and chemical characteristics of Malbec wines from Mendoza and California](#)

Food Chemistry, **143**, 256-267 (2014)
Ellena S. King *et al.*

Tags
DB-WAX, 6890N, 6890 GC, 5975 MSD, food testing and agriculture, food authenticity

Abstract

The authors used an Agilent J&W DB-WAX GC column, fitted to an Agilent 6890/5975 GC/MSD, to distinguish between Malbec grapes from California and Argentina, based on their chemical and sensory characteristics. Published by Elsevier B. V.

[3-Methyl-2-butene-1-thiol: Identification, analysis, occurrence and sensory role of an uncommon thiol in wine](#)

Talanta, **99**, 225-231 (2012)
Felipe San-Juan *et al.*

Tags
Bond Elut ENV, VF-5ms, DB-WAX, Vac Elut 20, food testing and agriculture, food authenticity

Abstract

Agilent Bond Elut ENV was used for solid phase extraction of a highly uncommon odorant, 3-methyl-2-butene-1-thiothiol, in wine. Specific steps in the process call out for derivatization and eluting compounds. The multi-dimensional GC-olfactometry (GC-O) technique used Agilent J&W GC columns. Published by Elsevier B. V.

Small molecule pharmaceuticals

[Inhalation of the Essential Oil of *Piper guineense* from Cameroon Shows Sedative and Anxiolytic-Like Effects in Mice](#)

Biological and Pharmaceutical Bulletin, **36**,
1608–1614 (2013)
Joan Manjuh Tankam, Michiho Ito

Tags
CP-Chirasil-Dex CB, HP-INNOWax, DB-WAX,
6850 GC, 5975 MSD, small molecule
pharmaceuticals, traditional medicines

Abstract

Qualitative analysis of *Piper guineense* essential oil was achieved using an Agilent 6850 GC equipped with an Agilent 5975 MSD and Agilent J&W CP-Chirasil-Dex CB and HP-INNOWax GC columns, A DB-WAX column was used for quantitative analysis. Published by the Pharmaceutical Society of Japan.

[Biocatalyst activity of entomogenous fungi: stereoselective reduction of carbonyl compounds using *tochukaso* and related species](#)

International Journal of Current Microbiology and Applied Sciences, **2**, 188-197 (2013)
K. Ishihara *et al.*

Tags
CP-Chirasil-Dex CB, DB-WAX, small molecule
pharmaceuticals, traditional medicines

Abstract

Agilent J&W CP-Chirasil-Dex CB and DB-WAX GC columns were used in a study of the stereoselective reduction of -keto esters and aromatic-keto amides from fungi.

[Preparation of Chiral Hydroxy Esters Using Actinobacteria: Biocatalyst Activity of Marine-Derived *Micromonospora* and *Streptomyces* Strains](#)

Open Journal of Applied Sciences, **3**, 116-122
(2013)
K. Ishihara *et al.*

Tags
CP-Chirasil-Dex CB, DB-WAX, small molecule
pharmaceuticals, traditional medicines

Abstract

Agilent J&W CP-Chirasil-Dex CB and DB-WAX GC columns were used in a study of the potential for marine-derived actinomycetes to act as biocatalysts. Published by SciRes.

www.agilent.com/chem

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