



Agilent Technologies

Agilent J&W HP-INNOWax

A collection of citations to advance your research

Table of contents

[Clinical research](#)

[Energy and chemicals](#)

[Environmental](#)

[Food testing and agriculture](#)

[Materials testing and research](#)

[Small molecule pharmaceuticals](#)

Clinical research

[Depression by a Green Tea Extract of Alcohol-Induced Oxidative Stress and Lipogenesis in Rat Liver](#)

Bioscience, Biotechnology, and Biochemistry,
75, 1668-1676 (2011)
Kuo-Hsin Chen *et al.*

Tags
ZORBAX 300SB-C18, HP-INNOWax, 7890 GC,
7693 Autosampler, 7000 Triple Quadrupole MS,
clinical research, disease research

Abstract

We determined the effects of a green tea extract with 36% alcohol on the blood alcohol content, oxidative stress, lipogenesis, inflammation and liver function of female Wistar rats. Tea alcohol significantly decreased the O_2^- , H_2O_2 and $HOCl$ amounts via catechins and not caffeine. Thirty days of alcohol gavage improved the level of reactive oxygen species (ROS) in the liver, bile and blood, increased the 4-hydroxynonenal-protein adducts, Kupffer cell infiltration and lipid accumulation in the liver, and elevated the plasma alanine aminotransferase level. A western blot analysis showed reduced expression of the oxidative enzymes (CYP2E1 and NADPH oxidase p47phox protein) and lipogenic enzymes (SREBP-1c and fatty acid synthase) in the alcohol-treated liver. Tea alcohol significantly attenuated these elevated parameters. We conclude that the green tea extract in alcohol efficiently reduced the amounts of O_2^- , H_2O_2 and $HOCl$ primarily due to the catechin content, and not caffeine. The developed tea liquor attenuated alcohol-induced oxidative injury and lipogenesis in the liver by the synergetic action of catechins and caffeine. ©2011 Taylor & Francis.

Energy and chemicals

[Applications of planar microfluidic devices and gas chromatography for complex problem solving](#)

Journal of Separation Science, **36**, 182-191
(2012)
Jim Luong *et al.*

Tags

LOWOX, VF-1ms, DB-1, HP-INNOWax,
PoraBOND Q, HP-PLOT Q, Capillary Flow Union,
6890N GC, 7890A GC, energy and chemicals,
refining

Abstract

A wide range of Agilent J&W GC columns and instruments were used in a comprehensive examination of microfluidic devices for hydrocarbon analysis. Published by John Wiley and Sons Ltd.

Environmental

[Application of Proton-Transfer-Reaction Mass Spectrometry to the Assessment of Odorant Removal in a Biological Air Cleaner for Pig Production](#)

Journal of Agricultural and Food Chemistry, **60**,
2599-2606 (2012)
Michael J. Hansen *et al.*

Tags

DB-1, HP-INNOWax, 7890A GC, 355 SCD, 6890N
GC, 5973 MSD, environmental, air analysis

Abstract

There is an urgent need to develop odor reduction technologies for animal production facilities, and this requires a reliable measurement technique for estimating the removal of odorants. The purpose of the present experiment was to investigate the application of proton-transfer-reaction mass spectrometry (PTR-MS) for continuous measurements at a biofilter from SKOV A/S installed at a pig production facility. PTR-MS was able to handle the harsh conditions with high humidity and dust load in a biofilter and provide reliable data for the removal of odorants, including the highly odorous sulfur compounds. The biofilter removed 80–99% of carboxylic acids, aldehydes, ketones, phenols, and indoles and ca. 75% of hydrogen sulfide. However, only ~0–15% of methanethiol and dimethyl sulfide was removed. In conclusion, PTR-MS is a promising tool that can be used to improve the development of biological air cleaning and other odor reduction technologies toward significant odorants. Reprinted with permission from the *Journal of Agricultural and Food Chemistry* © 2012 American Chemical Society.

[Smelling your way to food: can bed bugs use our odour?](#)

Journal of Experimental Biology, **215**, 623-629
(2012)
V. Harraca *et al.*

Tags
HP-5ms, HP-INNOWax, 6890 GC, 5973 MSD,
environmental, air analysis

Abstract

Human whole-body volatiles were analyzed using Agilent J&W HP-5ms and HP-INNOWax columns in an Agilent 6890/5973 GC/MSD. Published by the Company of Biologists.

Food testing and agriculture

[Determination of pesticide residues in complex matrices using multi-walled carbon nanotubes as reversed-dispersive solid-phase extraction sorbent](#)

Journal of Separation Science, **35**, 153-158
(2012)
Pengyue Zhao *et al.*

Tags
HP-5ms UI, DB-5, DB-17, 7890A GC,
5975C MSD, 7000 Triple Quadrupole MS, food
testing and agriculture, pesticides, fruit juice

Abstract

Agilent J&W GC columns were used with Agilent 6890 GC and 5973 MSD to analyze pesticide residues in leek, onion, ginger, and garlic. Published by John Wiley & Sons Ltd.

[Development and validation of a gas chromatography/mass spectrometry method for the simultaneous determination of melamine and cyromazine in animal feeds](#)

Journal of Animal and Veterinary Advances, **10**,
73-80 (2011)
Binru Shang *et al.*

Tags
HP-5ms UI, DB-5, DB-17, 7890A GC,
5975C MSD, 7000 Triple Quadrupole MS, food
testing and agriculture, pesticides, fruit juice

Abstract

A new method for simultaneous determination of melamine and cyromazine in animal feeds using Gas Chromatography-Mass Spectrometry (GC-MS) was developed and validated. Samples were extracted with trichloroacetic acid solution cleaned up by cation exchange solid-phase extraction cartridges and derivatized with N, O-bis (trimethylsilyl) trifluoroacetamide containing 1% trimethylchlorosilane followed by GC separation and MS detection. The limits of quantification were 0.10 mg kg⁻¹ for both melamine and cyromazine. Recoveries from feeds spiked at levels between 0.1 and 50 mg kg⁻¹ ranged from 84.2-99.5% with Relative Standard Deviation (RSD) <8% with the exception of a 10.2% RSD for 0.1 mg kg⁻¹ melamine. This validated method was successfully applied to commercial feed samples showing that it can be used as a routine tool for the surveillance and evaluation of the presence of melamine and cyromazine in animal feeds.©Medwell Journals.

[Effect of gender on growth performance, carcass traits and meat quality of calves of Avileña-Negra Ibérica breed](#)

Spanish Journal of Agricultural Research, **10**,
108-115 (2012)
A. Daza *et al.*

Tags
HP-INNOWax, 6890 GC, food testing and
agriculture, food processing and packaging

Abstract

Lipids from backfat were identified by gas chromatography using an Agilent 6890 GC equipped with a flame ionization detector and Agilent J&W HP-INNOWax column.

[Classification of Grape Berries According to Diameter and Total Soluble Solids To Study the Effect of Light and Temperature on Methoxypyrazine, Glutathione, and Hydroxycinnamate Evolution during Ripening of Sauvignon blanc \(*Vitis vinifera* L.\)](#)

Journal of Agricultural and Food Chemistry, **60**,
9454-9461 (2012)
Katja Šuklje *et al.*

Tags

HP-5ms UI, DB-5, DB-17, 7890A GC,
5975C MSD, 7000 Triple Quadrupole MS, food
testing and agriculture, pesticides, fruit juice

Abstract

Grape berries were classified according to diameter and total soluble solids (TSS) to study the effect of light and temperature on methoxypyrazines (MPs), glutathione (GSH), and hydroxycinnamates (HCAs) during the ripening of Sauvignon blanc. The light exposure of the fruiting zone was modified within leaf and lateral removal at the phenological stage berry of peppercorn size and no removal (control). In comparison to the control, the concentration of 3-isobutyl-2-methoxypyrazine (IBMP) was below the limit of detection in leaf removal 2 weeks before harvest. Leaf removal had no significant influence on GSH and HCAs in the grape juice at harvest. Berry diameter significantly influenced the concentration of IBMP in the grape juice and did not influence the concentration of GSH and HCAs. At harvest, the concentrations of IBMP in grape juices of similar TSS in the control were 12.6 and 5.2 ng/L in 15.5 and 13.5 mm berry diameter classes, respectively. Furthermore, the study showed that berries of the same diameter were not at the same physiological ripening level (not the same TSS). Reprinted with permission from the *Journal of Agricultural and Food Chemistry* © 2012 American Chemical Society.

Materials testing and research

[Chemical composition and antibacterial, antifungal and antioxidant activities of the flower oil of *Retama raetam* \(Forssk.\) Webb from Tunisia](#)

Natural Product Research, **29**, 789-796 (2010)
Hayet Edziri *et al.*

Tags

HP-20M, HP-5, HP-5ms, HP-INNOWax, 5890 GC,
materials testing and research, consumer
products

Abstract

The chemical composition of the essential oils obtained by hydrodistillation from the flowers of *Retama raetam* (Forssk.) Webb cultivated in Tunisia was determined by GC and GC/MS analysis. A total of 50 components representing 98.58% of the oil were identified: nonanal (35.75%), α -humulene (29.29%), acetaldehyde (7.84%), linalool (5.62%), myrcene (3.38%), tridecanal (2.21%), β -caryophyllene (1.79%), α -terpinyl acetate (1.46%), terpinolene (1.26%) and methyl anthranilate (1.06%) were found to be the major components. The oil was evaluated for antibacterial and antifungal activities using a microdilution assay against some bacteria and yeasts. The minimal inhibitory concentrations (MIC) of the essential oil varied between 0.625 and 5 mg mL⁻¹ and the minimum bactericidal concentrations (MBC) were superior to 5 mg mL⁻¹ of oil for most strains. The antioxidant potential of the essential oil was evaluated using the 2,2'-diphenyl-1-picrylhydrazyl free radical scavenging method. The essential oil possesses good antioxidant properties (IC₅₀ = 0.800 mg mL⁻¹). The results may suggest that the flower oil of *R. raetam* possesses compounds with antibacterial, antifungal and antioxidant capacities, and thus the oil can be explored as a natural preservative ingredient in food and/or pharmaceutical preparations. © 2010 Taylor & Francis.

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, 5975, 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..

www.agilent.com/chem

Agilent shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material. Information, descriptions, and specifications in this publication are subject to change without notice.

© Agilent Technologies, Inc., 2014

Printed in the UK
18 November, 2014

5991-3030EN

The Measure of Confidence



Agilent Technologies