1. Specific receptor for hydrazine: mapping the in situ release of hydrazine in live cells and in an in vitro enzymatic assay

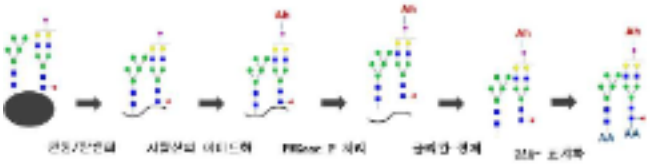
By Ali, Firoj; A., Anila H.; Taye, Nandaraj; Mogare, Devraj G.; Chattopadhyay, Samit; Das, Amitava
From Chemical Communications (Cambridge, United Kingdom) (2016), 52(36), 6166-6169. Language: English, Database: CAPLUS, DOI:10.1039/C6CC01787H

We report a new chemodosimetric reagent capable of detecting hydrazine in the presence of several other competing amine derivs. and ionic analytes of biol. relevance. This reagent has been utilized for real time monitoring of in situ N_2H_4 release during the metab. of a crucial tuberculosis drug, isoniazid, in live HepG2 cells. The fluorescence response of the reagent based on its specific reaction with N_2H_4 is used for developing an in vitro assay for aminoacylase-1.

~1 Citing

2. Method for qualitative and quantitative analysis of sugar at high speed using MALDI-TOF-MS and UPLC

By Kim, Yun Gon; Park, Hae Min; Kim, Yun U.; Kim, Gyeong Jin; Yang, Yeong Heon
From Repub. Korean Kongkae Taeho Kongbo (2015), KR 2015015718 A 20150211, Language: Korean, Database: CAPLUS



The present invention relates to a method for analyzing sugar at high speed, involving following steps: (i) reducing glycoprotein by adding dithiothreitol in protein; (ii) alkylating the reduced glycoprotein by adding iodoacetamide; (iii) amidating the reduced and alkylated glycoprotein by adding acetohydrazide; (iv) extg. the amidated protein using 96-well plate (10K mol. wt. cutoff) after sepg. amidated N-glycans by adding PNGase F in the amidated protein; (v) refining the extd. amidated N-glycans using a porous graphite carbon plate on the 96-well plate; (vi) forming amidated labeled N-glycan with 2-aminobenzoic acid by adding the 2-aminobenzoic acid in the purified amidated N-glycans; and (vii) qual. and quant. analyzing the amidated labeled N-glycan with 2-aminobenzoic acid using a matrix-assisted laser desorption ionization time-of-flight mass spectrometry. The sugar found in glycoprotein is selected from glucose, galactose, mannose, fucose, N-acetylgalactosamine, N-acetylglucosamine and sialic acid. According to the present invention, the method enables the qual. and quant. analyze of sugar at high speed using the matrix-assisted laser desorption ionization time-of-flight mass spectrometry with reduced time in a cost-effective manner.

~0 Citings

3. GC-MS determination of components in particulate and gaseous matters of mainstream smoke of cigarette

By Li, Wei; Wang, Jun-xia; Zhou, Hai-yun; Kong, Hao-hui; Zeng, Jin
From Lihua Jianyan, Huaxue Fence (2013), 49(12), 1468-1474. Language: Chinese, Database: CAPLUS

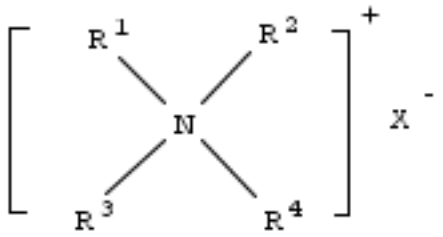
The particulate matters in mainstream smoke of cigarettes were trapped by Cambridge filter, and the gaseous matters were absorbed by cold trap-solvent method. The particulate matters on the filter were extd. with methanol. The components in the absorbent and ext. were sepd. individually on DB-WAX and detd. by MS. It was found that: (1) 75 components in gaseous matters and 60 components in particulate matter were identified; (2) 17 compds. were found in both the phases of mainstream cigarette smoke; (3) most of the hydrocarbons were in the gaseous matters, with only a few in the particulate matters; (4) 5 phenols were found in gaseous matters only; (5) 21 benzenes were identified, which were found mainly in gaseous matters.

~0 Citings

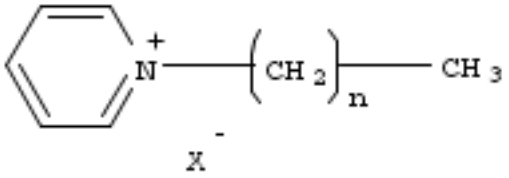
4. A cyanide-free hemolytic agent

By Feng, Jianjun; Zhu, Xuan
From Faming Zhuanli Shenqing (2014), CN 103698501 A 20140402, Language: Chinese, Database: CAPLUS

The invention discloses a cyanide-free hemolytic agent. The inventive cyanide-free hemolytic agent comprises at least one solvent, one cosolvent, one ligand stabilizer, pH 2-11 buffer soln. and water. The hemolytic agent contains compd. with structure formula (I) or (II), in which R_1 is C_{8-20} alkyl, C_{8-20} alkenyl or C_{8-20} alkynyl; R_2, R_3, R_3 is C_{1-4} alkyl, C_{1-4} alkenyl or C_{1-4} alkynyl; X- is chlorine ion, bromine ion, fluorine ion, acetate or sulfate; n is 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 or 19. He solvent is dodecyl tri-Me ammonium chloride, myristyl tri-Me ammonium bromide or hexadecyl tri-Me ammonium bromide resp. The cosolvent is polyoxyethylene sorbitan monolaurate, polyoxyethylene disorbitan monolaurate, polyoxyethylene-polyoxypropylene copolymer, fatty alc. polyoxyethylene, or phenol polyoxyethylene ether. The ligand stabilizer is amide compds. as showed in formula IV and formula V, where R5-R12 is H, C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxyl, C_{1-4} carboxyl, and C_{2-6} heterocyclic radical group resp.; n is 0, 1, 2, 3 or 4. The ligand stabilizer of hydrazide compds. are as showed in formula VI and formula VII, where R13-R21 is H, C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxyl, C_{1-4} carboxyl, and C_{2-6} heterocyclic radical group resp.; n is 0, 1, 2, 3 or 4. The buffer soln. is phosphate buffer, citrate buffer, barbital sodium buffer, phthalate buffer, glycinate buffer, Tris buffer or borax buffer. The inorg. salt is alk. metal halide or sulfate. Solvent and cosolvent dissolve membrane of erythrocyte and leukocyte to be dissolved, thus Hb can be measured and leukocyte can be sorted and counted. The ligand stabilizer is capable of forming a more stable deriv. with Hb, so that measurement result is more accurate, reliable and consistent. The buffer soln. can regulate pH value of hemolytic agent, so that one or more leukocyte sub-populations can be appraised. The inventive cyanide-free hemolytic agent is suitable for use in hospital and scientific research lab., is particularly suitable for instrument with requirements on fast measurement speed.



I



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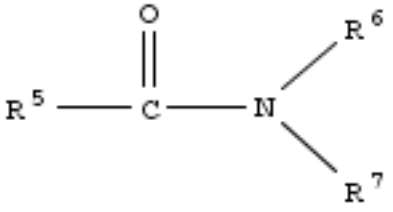

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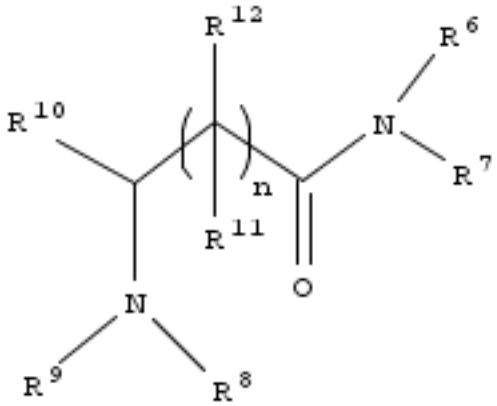
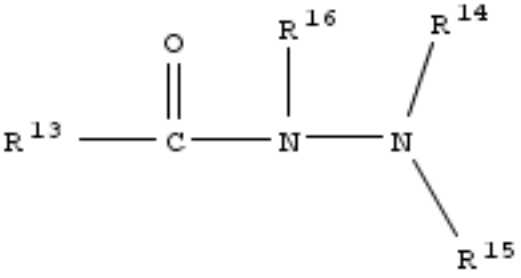
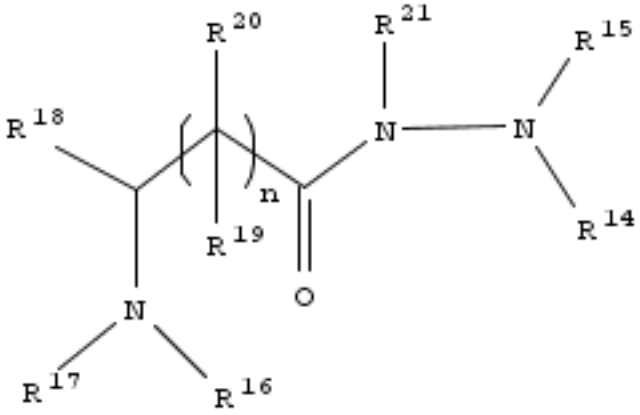


V



VI



VII

~0 Citings

5. Characterization of volatile metabolites of Listeria spp. strains

By Chen, Xue; Ni, Peng; Yu, Yong-xin; Pan, Ying-jie; Zhao, Yong
From Shipin Kexue (Beijing, China) (2013), 34(10), 231-237. Language: Chinese, Database: CAPLUS, DOI:10.7506/spkx1002-6630-201310051

Here we analyzed for the first time volatile metabolites from five species of Listeria were systematically by gas chromatog.-mass spectroscopy (GC-MS). Cultures of all the Listeria species shared the common volatile metabolites: three ketones, two aldehydes, two alkanes and four other substances. There were significant differences in the relative content of the common volatile metabolites among these Listeria cultures. The new volatile metabolites ethanol, acetone, 3-hydroxy-2-butanone, Bu acetate, 3-(methylthio) propanal and 6-Bu nonane as well as those unique to each strain were formed. Specific chem. barcodes were established for the unique smell of each strain. Effective discrimination among the five Listeria strains was performed using electronic nose. The chem. barcodes hold promise for the nondestructive, rapid identification and detection of Listeria strains.

~0 Citings

6. Method for amidation of sialooligosaccharides

By Toyoda, Masaaki
From Jpn. Kokai Tokkyo Koho (2013), JP 2013068594 A 20130418, Language: Japanese, Database: CAPLUS

The method for amidation of sialooligosaccharides, useful as diagnostic markers, involves the steps of (a) releasing sugar chains from biol. samples, (b) bringing the aldehyde groups of the resulting free sugar chains into contact with solid-state supports having hydrazide groups on the surfaces for trapping the sugar chains by the supports via hydrazone bonds, and (c) amidating sialic acids in the trapped sugar chains in nonaq. solvents. The method may also involve the steps of (d) releasing the trapped sugar chains and (e) reductively aminating the resulting free sugar chains with amino group-contg. compds. for labeling. The method enables efficient sepn. and anal. of sialooligosaccharides.

~1 Citing

7. Fast pyrolysis of creosote treated wood ties in a fluidized bed reactor and analytical characterization of product fractions

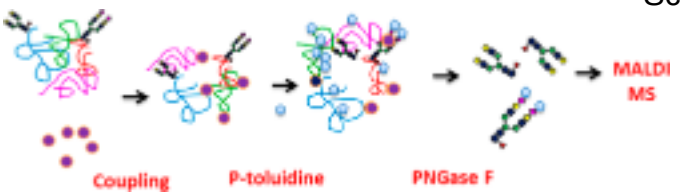
By Jung, Su-Hwa; Koo, Won-Mo; Kim, Joo-Sik
From Energy (Oxford, United Kingdom) (2013), 53, 33-39. Language: English, Database: CAPLUS, DOI:10.1016/j.energy.2013.03.020

A fraction of creosote treated wood ties was pyrolyzed in a pyrolysis plant equipped with a fluidized bed reactor and char-sepn. system at different temps. Analyses of each pyrolysis product, esp. the oil, were carried out using a variety of anal. tools. The max. oil yield was obtained at 458 °C with a value of 69.3 wt%. Oils obtained were easily sepd. into two phases, a creosote-derived fraction (CDF) and a wood-derived fraction (WDF). Major compds. of the WDF were acetic acid, furfural and levoglucosan, while the CDF was mainly composed of polycyclic arom. hydrocarbons (PAHs), such as 1-methylnaphthalene, biphenyl, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, fluoranthene and pyrene. HPLC anal. showed that the concn. of PAHs of the CDF obtained at 458 °C constituted about 22.5 wt% of the oil.

~10 Citings

8. Mass Spectrometric Analysis of Sialylated Glycans with Use of Solid-Phase Labeling of Sialic Acids

By Shah, Punit; Yang, Shuang; Sun, Shisheng; Aiyetan, Paul; Yarema, Kevin J.; Zhang, Hui
From Analytical Chemistry (Washington, DC, United States) (2013), 85(7), 3606-3613. Language: English, Database: CAPLUS, DOI:10.1021/ac3033867



The anal. of sialylated glycans is crit. for understanding the role of sialic acid in normal biol. processes as well as in disease. However, the labile nature of sialic acid typically renders routine anal. of this monosaccharide by mass spectrometric methods difficult. To overcome this difficulty we pursued derivatization methodologies, extending established acetohydrazide approaches to aniline-based methods, and finally to optimized p-toluidine derivatization. This new quant. glycoform profiling method with use of MALDI-TOF in pos. ion mode was validated by first comparing N-glycans isolated from fetuin and serum and was then exploited to analyze the effects of increased metabolic flux through the sialic acid pathway in SW1990 pancreatic cancer cells by using a colabeling strategy with light and heavy toluidine. The latter results established that metabolic flux, in a complementary manner to the more well-known impact of sialyltransferase expression, can critically modulate the sialylation of specific glycans while leaving others virtually unchanged.

~22 Citings

9. Volatile organic compound biomarkers of irritable bowel syndrome or inflammatory bowel disease and their determination in feces or urine by thermal desorption-gas chromatography-mass spectroscopy

By Waring, Rosemary; Hunter, John
From PCT Int. Appl. (2012), WO 2012127213 A1 20120927, Language: English, Database: CAPLUS

The invention relates to a method of identifying or monitoring irritable bowel syndrome (IBS) or inflammatory bowel disease (IBD) comprising detecting one or more volatile org. compds. (VOCs) from a sample from a subject. Typically the sample is fecal material or urine. The VOC may be one or more of Et esters of propanoic or butanoic acids, propanoic acid, butanoic acid, butanoic acid Me ester, propanoic acid Me ester, 3-Me butanoic acid, 1-butanol, 1-propanol, indole, 2-Me propanoic acid, 1-pentanol, hydroxy urea, Me cyclobutane, (R)-(-)-2-amino-1-propanol, 2-hydroxy-propanamide, acetic acid hydrazide, 2-pentanone, pyrrole, 1-butoxy-2-propanol, 2-butanone, di-Me disulfide, 2-methyl-1,3-dioxolane and sulfur dioxide.

~1 Citing

10. Microwave-assisted extraction technology of ginger oil and its component analysis by gas chromatography-mass spectrometry

By Cui, Hua-li; Sun, Xue-hua; Fan, Jiang-peng
From Anhui Nongye Kexue (2011), 39(21), 13088-13090. Language: Chinese, Database: CAPLUS

The objective of this paper aim was to study microwave-assisted extn. technol. of ginger oil and its component anal. by GC-MS. Microwave-assisted extn. technol. conditions of ginger oil were studied by taking dry ginger power as material and distd. water as polar solvent, meanwhile components of ginger oil were analyzed by GC-MS. Results showed that the optimum microwave-assisted extn. technol. of ginger oil was as follows: distd. water was used as the extn. solvent: the microwave digestion pressure was 800 W;the microwave digestion time was 60 s; the microwave digestion pressure was 1.5 kg/cm^2; then the distn. was operated with water-gas. Under above conditions, the extg. rate of ginger oil was improved by about 46.5 % more than that of operating with water-gas only. GC-MS anal. result showed that there were 37 kinds of matters with more than 70% similarity, mainly including alkanes, alkenes, aldehyde, alcs., ketones, esters, etc. It was concluded that the research provides theor. basis for the development and application of ginger oil.

~0 Citings

11. Study on biomedical prospects of extractives of Pinus massoniana Lamb

By Zhang, Dang-Quan; Ma, Qing-Zhi; Liu, Qi-Mei; Peng, Wan-Xi; Zhang, Huai-Yun; Peng, Kuang; Gu, Zheng-Jun; Yang, Mo-Hua
From Applied Mechanics and Materials (2011), 55-57(Pt. 1, Recent Trends in Materials and Mechanical Engineering Materials, Mechatronics and Automation), 161-165. Language: English, Database: CAPLUS, DOI:10.4028/www.scientific.net/AMM.55-57.161

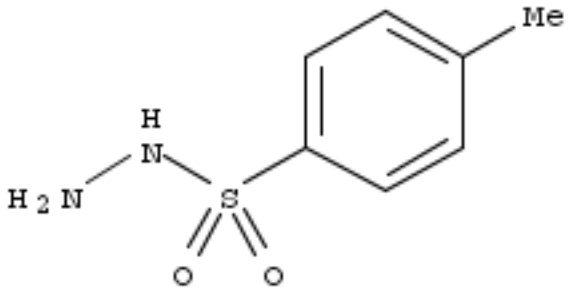
Pinus massoniana Lamb has been used to heal some specific diseases in the Chinese Folk for a long time. In order to explore the wide utilization in biomedicine and spicery, the chem. components of helium extractives from the fresh wood of Pinus massoniana Lamb was studied by TD-GC/MS. The results showed that the main components were 1,4-methanoazulene, decahydro-4,8, 8-trimethyl-9-methylene, (29.98%), 1,4-methanoazulen-9-ol, decahydro-1,5,5,8a-tetramethyl, (10.32%), 1R-α-Pinene (8.33%), 1,2,4-methenoazulene, decahydro-1,5,5,8a-tetramethyl, (4.72%), borneol (2.99%), thujopsene (2.80%), 1-phenanthrenecarboxaldehyde, 7-ethenyl-1,2,3,4,4a,4b,5,6,7,9,10,10a-dodecahydro-1,4a,7-trimethyl, (2.53%), bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-,(1R), (2.52%), caryophyllene oxide (2.40%), tricyclo[5.4.0.0(2,8)]undec-9-ene, 2,6,6,9-tetra-Me, (2.32%), 1,3-benzodioxole,5-(2-propenyl), (2.274%), acetic acid (2.07%), eucalyptol (1.70%), benzaldehyde, 4-hydroxy, (1.61%), etc. The anal. result suggested that the helium extractives from the fresh wood of Pinus massoniana Lamb could be used as industrial materials of biomedicines and spicery.

~0 Citings

12. Use of organic hydrazines in the recovery of nucleic acids or proteins from fixed tissue samples

By Khripin, Yuri; Virmani, Arvind; Kobayashi, Lori
From PCT Int. Appl. (2011), WO 2011082415 A2 20110707, Language: English, Database: CAPLUS

Methods and materials for improving nucleic acid or protein recovery from samples preserved in liq. cytol. preservative solns. by utilizing scavenger mols., such as hydrazine- and hydrazide-contg. compds., are provided. Lysis solns. comprising hydrazine- and hydrazide-contg. compds. and kits comprising the same are also provided.



~0 Citings

13. Maillard reaction composition analysis on hydrolyzate of pigskin and reduced sugar by HS-GC-MS

By Wu, Liang; Zheng, Jianxian
From Shipin Gongye Keji (2010), 31(4), 71-73, 77. Language: Chinese, Database: CAPLUS

The Maillard reaction product of hydrolyzate of pigskin and reduced sugar was analyzed by headspace-GC-MS, 54 components were identified, the main chem. components were hydrocarbons 8.522%, alcs. 6.65%, aldehydes 12.805%, ketones 23.371%, carboxylic acids 0.251%, esters 1.4%, furans 16.957%, pyridines 0.252%, thiophene type 5.263%, thiazole type 20.072%, linalool 3.56%, pyrazine type 0.406%. The HS-GC-MS method has many advantages, such as high sensitivity, simple and fast pretreatment. It is applicable in analyzing pork flavor.

~0 Citings

14. Enrichment Method of Sulfated Glycopeptides by a Sulfate Emerging and Ion Exchange Chromatography

By Toyoda, Masaaki; Narimatsu, Hisashi; Kameyama, Akihiko
From Analytical Chemistry (Washington, DC, United States) (2009), 81(15), 6140-6147. Language: English, Database: CAPLUS, DOI:10.1021/ac900592t

Sulfated glycoproteins are of growing importance for biomarker discovery, as well as for investigating mol. recognition processes. Mass spectrometry (MS) has become a powerful technique for the characterization of glycans and glycoproteins. However, characterization and detection of sulfated glycopeptides by MS is difficult because of the low abundance and low ionization efficiency of these mols. To overcome this problem, the authors developed a novel enrichment procedure for sulfated glycopeptides. The procedure consists of anion exchange chromatog. and a sulfate emerging (SE) method which controls the net charge of peptides by utilizing limited proteolysis and modification with acetohydrazide. Using this procedure, the authors are able to enrich and characterize the sulfated glycopeptides of bovine LH (bLH). Furthermore, the authors demonstrate the enrichment and detection of sulfated glycopeptides from a complex mixt. comprising human serum spiked with bLH at a concn. of 0.1%.

~7 Citings

15. A kinetic-potentiometric method for the simultaneous determination of hydrazine and acetylhydrazine

By Karimi, M. A.; Mashhadizadeh, M. H.; Behjatmanesh-Ardakani, R.; Sahraie, N.
From Asian Journal of Chemistry (2009), 21(5), 3726-3740. Language: English, Database: CAPLUS

Simultaneous detn. of hydrazine (HZ) and acetylhydrazine (AHZ) by H-point std. addn. method (HPSAM) and partial least squares (PLS) regression was carried out based on kinetic data of novel potentiometry. The rate of chloride ion prodn. in reaction of HZ and AHZ with N-chlorosuccinimide (NCS) was monitored by a chloride ion-selective electrode. The exptl. dada shows not only the good ability of ion-selective electrodes (ISEs) as a detector for the direct detn. of chloride ion but also for simultaneous kinetic-potentiometric anal. using HPSAM and PLS methods. The methods are based on the differences obsd. in the prodn. rate of chloride ions. The results show that simultaneous detn. of HZ and AHZ can be performed in their concn. ranges of 0.4-10.0 and 2.0-20.0 μg mL^{-1}, resp. The total relative std. error for applying the PLS method to 9 synthetic samples in the concn. ranges of 0.0-9.0 μg mL^{-1} for HZ and 2.0-20.0 μg mL^{-1} for AHZ was 2.00. In order for the selectivity of the method to be assessed, the effects of certain foreign ions upon the reaction rate were evaluated and detd. Both methods (HPSAM and PLS) were evaluated using a set of synthetic sample mixts. and then applied for simultaneous detn. of HZ and AHZ in water samples.

~1 Citing

16. Application of principal component regression and partial least square to the simultaneous kinetic-spectrophotometric determination of ternary mixture of hydrazine, phenylhydrazine and acetylhydrazine

By Karimi, M. A.; Taher, M. A.; Ardakani, R. Behjatmanesh; Abdollahzadeh, S.
From Asian Journal of Chemistry (2008), 20(3), 2169-2179. Language: English, Database: CAPLUS

A method for the simultaneous detn. of the hydrazine (HZ) and its derivs. in water samples was developed. It is based on reaction kinetics and spectrophotometry and results are interpreted with the aid of partial least squares regression (PLS) and principal component regression (PCR). The anal. method relies on the differential rates of redn. of copper(II) with HZ, phenylhydrazine (PHZ), and acetylhydrazine (AHZ) in the presence of neocuproine (NC) and monitoring the resulted colored complex of Cu(I)/NC in SDS as micellar media at 452 nm. The optimized method was successfully tested by analyzing each of the species independently and linear calibration models are described. Simultaneous detn. of HZ, PHZ and AHZ in ternary mixts. using these chemometrics methods could be performed in their concn. ranges of 0.10-1.0, 0.10-6.0, and 0.50-100 μg mL^{-1}, resp. The root mean squares errors of prediction (RMSEP) of HZ, PHZ, and AHZ were 0.016, 0.026 and 0.054 (for PLS) 0.011, 0.095, and 0.141 (for PCR), resp. Both the proposed methods (PCR and PLS) were validated using a set of synthetic sample mixts. and subsequently applied to the simultaneous detn. of HZ, PHZ, and AHZ in water samples.

~4 Citings

17. Quantitative Derivatization of Sialic Acids for the Detection of Sialoglycans by MALDI MS

By Toyoda, Masaaki; Ito, Hiromi; Matsuno, Yu-ki; Narimatsu, Hisashi; Kameyama, Akihiko
From Analytical Chemistry (Washington, DC, United States) (2008), 80(13), 5211-5218. Language: English, Database: CAPLUS, DOI:10.1021/ac800457a

Recently, glycans have been recognized as valuable biomarkers for various disease states. In particular, sialoglycans, which have sialic acids at their terminal end, are likely to have relevance to diseases such as cancer and inflammation. Mass spectrometry (MS) has become an indispensable tool for biomarker discovery. However, matrix-assisted laser desorption ionization (MALDI) MS of sialoglycans normally causes loss of sialic acid. Me esterification or amidation of carboxyl functionality in sialic acid has been reported to suppress the loss of sialic acids. The authors found that the modifications of α2,3-linked sialic acids proceed less efficiently than those at α2,6-linkages. Furthermore, the modifications of the α2,3-linked sialic acids are incomplete. This variability in the extent of derivatization presents a major problem in terms of glycan biomarker discovery using MALDI MS. In this study, the authors developed a novel amidation using acetohydrazide which can completely modify both types of linkages of sialoglycans. With the use of this method, the authors demonstrate MS profiling of N-linked glycans released from a bovine fetuin which is rich in α2,3-linked sialic acids.

~33 Citings

18. Reaction of the Indole Group with Malondialdehyde: Application for the Derivatization of Tryptophan Residues in Peptides

By Foettinger, Alexandra; Melmer, Michael; Leitner, Alexander; Lindner, Wolfgang
From Bioconjugate Chemistry (2007), 18(5), 1678-1683. Language: English, Database: CAPLUS, DOI:10.1021/bc070001h

A method for the selective modification of tryptophan residues based on the reaction of malondialdehyde with the indole nitrogen of the tryptophan side chain at acidic conditions is presented. The condensation reaction is quant. and leads to a substituted acrolein moiety with a remaining reactive aldehyde group. As is shown, this group can be further converted to a hydrazone using hydrazide compds., but if hydrazine or phenylhydrazine are used, release of the free indole group is obsd. upon cleavage of the substitution. Alternatively, secondary amines such as pyrrolidine may also act as cleavage reagents. This general reaction scheme has been adapted and optimized for the derivatization of tryptophan-contg. peptides and small N-heterocyclic compds. It serves as the basis of a reversible tagging scheme for Trp-peptides or mols. of interest carrying indole structures as it allows the specific attachment and removal of a reactive group that may be used for a variety of purposes such as affinity tagging.

~20 Citings

19. Stabilization of 6-phosphogluconate dehydrogenase (6PGDH), and reagents and kits containing the enzyme and stabilizers

By Sakai, Yasuhiro
From Jpn. Kokai Tokkyo Koho (2007), JP 2007111045 A 20070510, Language: Japanese, Database: CAPLUS

6PGDH is stabilized (A) in the presence of NAD and/or NADP as coenzyme by (1) water sol. compds. chosen from $HCR^1R^2CHR^3R^4$ [R^1 = H, Me, SO_3H; R^2 = SH, CH_2SH, NH_2; R^3 = SH, CH_2SH, NH_2, $NHCONH_2$, $NHC(NH)NH_2$; R^4 = H, OH, Me, NH_2, OMe, CO_2H, CO_2Me, CO_2Et; when R^2 = SH, CH_2SH, then R^3 = NH_2, $NHCONH_2$, $NHC(NH)NH_2$; when R^2 = NH_2, then R^3 = SH, CH_2SH], R^5NHOR^6 (R^5, R^6 = H, NH_2, lower alkyl, cycloalkyl, lower alkenyl, aralkyl, aryl, lower alkanoyl, aroyl, cinnamyl, cinnamoyl), and/or $R^7R^8NNH_2$ [R^7, R^8 = H, lower alkyl, allyl, CHO, $C(NH)NHNH_2$, COMe, MeO_2C, EtO_2C, $C:R^9R^{10}$ (R^9 =S, O, NH, NNH_2; R^{10} = lower alkyl, NH_2, $NHNH_2$, $CONH_2$, $CONHNH_2$)], (2) S-contg. oxyacid reductants, their thio analogs, and/or their salts, and/or (3) aminoethylaminoethanol, or (B) in the absence of NAD and/or NADP by cyclohexyldiaminetetraacetic acid, PIPES, ADA, and/or thiols. Also claimed are reagents and kits contg. 6PGDH, the above stabilizers, and optional NAD(P). Thus, buffer soln. contg. 200 U/L 6PGDH and 42.5 mM thioglycerol was stored at 37° for 3 days to show 99.7% residual activity, vs. 76.1%, for control.

~1 Citing

20. Optimization of extraction methods and determination of components in tobacco flavor

By Guo, Fang-qiu; Zhong, Ke-jun; Huang, Jian-guo; Liang, Yi-zeng; Huang, Lan-fang
From Fenxi Shiyanshi (2006), 25(7), 18-22. Language: Chinese, Database: CAPLUS

The volatile and semi-volatile constituents in tobacco flavor were extd. with solvent extn., simultaneous distn. extn., stream distn. extn. and solid phase micro-extn. methods, and the information content and repeatability were used as the criterion for the optimization of the extn. method. Among the four methods, solvent extn. was provided with high information content and optimal repeatability. Chromatog. fingerprint of B3 flavor was developed by solvent extn. coupled with gas chromatog. and gas chromatog.-mass spectrometry, and 34 components accounting for 85.4% in B3 flavor were identified.

~1 Citing

21. A novel spectrophotometric method for the simultaneous kinetic analysis of ternary mixtures by mean centering of ratio kinetic profiles

By Afkhami, Abbas; Bahram, Morteza
From Talanta (2006), 68(4), 1148-1155. Language: English, Database: CAPLUS, DOI:10.1016/j.talanta.2005.07.017

A novel and very simple method was developed for the simultaneous spectrophotometric detn. of ternary mixts., without prior sepn. steps. The method is based on the mean centering of ratio kinetic profiles. The math. explanation of the procedure is illustrated. To study the applicability of the proposed method, it was applied to the simultaneous spectrophotometric detn. of hydrazine, phenylhydrazine and acetylhydrazine based on their condensation reactions with p-(dimethylamino)benzaldehyde (DAB) and p-nitrobenzaldehyde (NB) in micellar sodium dodecyl sulfate (SDS) media as a typical ternary mixt. The anal. characteristics of the method such as accuracy, precision, relative std. deviation and relative std. error (R.S.E.) were calcd.

~52 Citings

22. Simultaneous kinetic-spectrophotometric determination of hydrazine and acetylhydrazine in micellar media using the H-point standard addition method

By Afkhami, Abbas; Zarei, Ali Reza
From Analytical Sciences (2004), 20(8), 1199-1203. Language: English, Database: CAPLUS, DOI:10.2116/analsci.20.1199

The H-point std. addn. method (HPSAM), based on a spectrophotometric measurement for the simultaneous detn. of hydrazine and acetylhydrazine, is described. This method is based on the difference between the rates of their reactions with N,N-dimethylaminobenzaldehyde (DAB) in the presence of Na dodecyl sulfate (SDS) in acidic media. Hydrazine and acetylhydrazine could be detd. simultaneously at 0.020-0.70 and 0.20-5.0 mg L^{-1}, resp. Under the working conditions, the proposed method was successfully applied to the simultaneous detn. of hydrazine and acetylhydrazine in several synthetic mixts. and plasma and H_2O samples.

~14 Citings

23. Hydrazine and N-acetylhydrazine

By Lewalter, J.; Biedermann, P.; Schaller, K. H.
From Analyses of Hazardous Substances in Biological Materials (1999), 6, 141-161. Language: English, Database: CAPLUS

The method described here is suitable for monitoring persons who come into contact with hydrazine at the workplace. In addn. to hydrazine, the method detects N-acetylhydrazine, the main metabolite of hydrazine detoxification. Sample prepn. is carried out by adding pentafluorobenzaldehyde (PFBA) to the urine or plasma samples. The PFBA derivs. of hydrazine and N-acetylhydrazine are transferred to a diisopropyl ether/butyl acetate mixt. by means of liq.-liq. extn. The org. phase is analyzed by means of capillary gas chromatog. Detection of the hydrazine derivs. is carried out with an electron capture detector (ECD). Alternatively, the GC/MS technique can also be used, in particular in the lower concn. range . Calibration curves are obtained by analyzing pooled urine or pooled plasma samples to which known amts. of hydrazine and N-acetylhydrazine have been added, and which are processed and analyzed in the same manner as the samples.

~1 Citing

24. Detection of small traces of 15N2 and 14N2 by Faraday LMR spectroscopy of the corresponding isotopomers of nitric oxide

By Koch, M.; Luo, X.; Murtz, P.; Urban, W.; Morike, K.
From Applied Physics B: Lasers and Optics (1997), 64(6), 683-688. Language: English, Database: CAPLUS, DOI:10.1007/s003400050234

A Faraday LMR spectrometer for detection of low concns. of $^{15}N_2$ in a gas phase sample is described. The N is transformed by a microwave discharge into NO. The latter is analyzed by recording both a ^{15}NO and a ^{14}NO Faraday LMR signal. The detn. of the transformation rate from N_2 into NO is described. The method of measurement and the achieved sensitivity (≈0.1 ppm $^{15}N_2$ ≈ 4 nmol $^{15}N_2$/L gas) of the spectrometer are discussed. An application in pharmacol., where ^{15}N is used as a tracer for metab. is indicated. First expts. with the exhalation of a rat show that the app. is useful to give a new quality of results.

~15 Citings

25. High-performance liquid chromatographic determination of isoniazid, acetylisoniazid and hydrazine in biological fluids

By Seifart, H. I.; Gent, W. L.; Parkin, D. P.; van Jaarsveld, P. P.; Donald, P. R.
From Journal of Chromatography B: Biomedical Sciences and Applications (1995), 674(2), 269-75. Language: English, Database: CAPLUS, DOI:10.1016/0378-4347(96)82886-6

The basic principle of derivatization of a hydrazide moiety with an aldehyde as applied in the method developed by Lacroix et al. (1984) for the quantitation of isoniazid and acetylisoniazid was improved by modification, standardization and extension to allow quantitation of hydrazine in patient samples. It was shown that 40 μL of 1% methanolic cinnamaldehyde per 200 μL of deproteinized analyzate gave maximal chromophoric isoniazid-cinnamaldehyde conjugates, read at 340 nm. The hydrolytic loss of isoniazid, crucial to the quantitation of acetylisoniazid, could be compensated for by introduction of an appropriate set of calibration curves. Although the method described here allows quantitation of monoacetylhydrazine and diacetylhydrazine, in addn. to hydrazine, in monospiked samples, the method cannot be used for the quantitation of the acetylated metabolites of hydrazine in patient samples because of a lack of specificity. Linear calibration curves in the range 1-25 μg/mL for isoniazid and acetylisoniazid, 10-400 ng/mL for hydrazine and 50-1000 ng/mL for monoacetylhydrazine and diacetylhydrazine, was constructed; analyte recoveries approaching 100% was achieved in all instances.

~75 Citings

26. A new elemental analysis method based on thermogravimetric data and applied to alkoxysilane immobilized on silicas

By Cestari, A. R.; Airoldi, C.
From Journal of Thermal Analysis (1995), 44(1), 79-87. Language: English, Database: CAPLUS, DOI:10.1007/BF02547136

A new analytic method based on TG and applied to chem. functionalized surfaces is proposed. The mass losses of surfaces modified with alkoxysilane reagents, Sup-$CH_2CH_2CH_2$-R (Sup = support and R = Cl, Sh, NH_2, $NHCONH_2$, NHNHCOMe or $(CH_2)_4NH$), are interpreted by considering the phys. adsorbed water, the silanol groups and the org. moiety. The elemental analyses calcd. from these data are in agreement with those obtained by classical elemental anal. The method is quick and reproducible, and requires the use of only a few milligrams of material.

~32 Citings

27. Comprehensive assay for pyrazinamide, rifampicin and isoniazid with its hydrazine metabolites in human plasma by column liquid chromatography

By Walubo, A.; Smith, P.; Folb, P. I.
From Journal of Chromatography B: Biomedical Sciences and Applications (1994), 658(2), 391-6. Language: English, Database: CAPLUS, DOI:10.1016/0378-4347(94)00230-4

A comprehensive assay for detn. of pyrazinamide (PZA), rifampicin (RIF), isoniazid (INH) and hydrazine metabolites is described. The method involves org. solvent extn. of PZA and RIF, followed by derivatization of INH, monoacetylhydrazine (mHYD) and hydrazine (HYD) with salicylaldehyde and extn. with di-Et ether. Acetylisoniazid (acINH) and diacetylhydrazine (dHYD) were hydrolyzed to INH and mHYD, resp., and processed as above. Using a gradient solvent programmer, PZA and RIF were analyzed on a C_8 (5 μm) column at 248 nm, while INH and metabolites were analyzed on a C_{18} (5 μm) ODS2 column at 280 nm.

~37 Citings

28. GC-MS analysis of the whole distillation cuts of fusel oil

By Gao, Meihua; Li, Qing; Che, Zhongling
From Huaxue Yu Nianhe (1991), (2), 83-4. Language: Chinese, Database: CAPLUS

Twenty-two compns. were identified and analyzed by GC-mass spectroscopy from the whole distn. cuts of fusel oil. The results are discussed with regard to the possible perfume source from fusel oil.

~0 Citings

29. Determination of hydrazine in biofluids by capillary gas chromatography with nitrogen-sensitive or mass spectrometric detection

By Preece, N. E.; Forrow, S.; Ghatineh, S.; Langley, G. J.; Timbrell, J. A.
From Journal of Chromatography, Biomedical Applications (1992), 573(2), 227-34. Language: English, Database: CAPLUS, DOI:10.1016/0378-4347(92)80123-8

Plasma and liver levels of hydrazine were detd. at 10, 30, 90, and 270 min in rats given 0.09, 0.27, 0.84 and 2.53 mmol of hydrazine per kg body wt. orally by capillary gas chromatog.-mass spectrometry of its pentafluorobenzaldehyde adduct (DFBA, m/z 388) using selected ion monitoring with ^{15}N-labeled hydrazine as the internal std. (adduct, m/z 390). The mean half-life for hydrazine in the plasma was approx. 2 h but varied with dose. Urinary excretion (0-24 h) of hydrazine and its metabolite acetylhydrazine were detd. employing nitrogen-phosphorus detection of the adducts utilizing a novel internal std., pentafluorophenylhydrazine, the adduct of which structurally resembles DFBA. The fraction of the original dose excreted as hydrazine (and acetylhydrazine) declined with increasing dose.

~17 Citings

30. Analysis of isoniazid, acetylhydrazine and [15N2]acetylhydrazine in serum by capillary gas chromatography-ammonia chemical ionization mass spectrometry

By Karlaganis, Georg; Peretti, Elmar; Lauterburg, Bernhard H.
From Journal of Chromatography, Biomedical Applications (1987), 420(1), 171-7. Language: English, Database: CAPLUS, DOI:10.1016/0378-4347(87)80169-X

In order to study the metab. and hepatotoxicity of isoniazid (I) in humans it is necessary to distinguish between the effects of I and the effects of its metabolite acetylhydrazine (II). In order to study the interaction of I and II (which apparently compete for acetylation), it is necessary to be able to distinguish exogenously administered II from II resulting from the metab. of I. For this purpose, [$^{15}N_2$]acetylhydrazine was prepd. from [$^{15}N_2$]hydrazine sulfate and MeOAc. I, II, and [$^{15}N_2$]-II were detd. in deproteinized human blood serum by extn. of interfering lipids into CH_2Cl_2, derivatizing the aq. phase with benzaldehyde, extn. twice with CH_2Cl_2, evapn. of combined CH_2Cl_2 phases to dryness, reconstitution in EtOAc, and sepn. and detection by capillary gas chromatog.-NH_3 chem. ionization mass spectrometry with a Finnigan 1020 instrument. The deuterated internal stds., [$^2H_6$]benzaldehyde isonicotinoylhydrazone, [$^2H_6$]benzaldehyde acetylhydrazone, and [$^2H_{12}$]benzaldehyde azine, were prepd. by reaction of [$^2H_6$]benzaldehyde with isoniazid, acetylhydrazine, and hydrazine. The method was sensitive and produced linear calibration curves in the nm/mL region, the coeffs. of variation for intraday reproducibility were 5.0% for I, and 4.1% for II. Studies in healthy volunteers indicated that I delays the elimination of II, apparently by computing for acetylation.

~7 Citings

31. A sensitive and selective resin spot test for simultaneous microgram detection of hydrazine derivatives

By Grdinic, V.; Medic-Saric, M.; Spoljaric, G.
From Pharmazie (1986), 41(10), 715-16. Language: English, Database: CAPLUS

Hydrazine derivs. were detected in micro amts. by color reaction with p-dimethylaminobenzaldehyde [100-10-7] on a colorless ion-exchange resin Dowex HCR [62031-53-2]. The limits of identification and selectivity are reported. Both the sensitivity and the selectivity of these color reactions were increased, as compared to ordinary spot test methods.

~1 Citing

32. Determination of isoniazid, acetylisoniazid, acetylhydrazine and diacetylhydrazine in biological fluids by high-performance liquid chromatography

By Von Sassen, W.; Castro-Parra, M.; Musch, E.; Eichelbaum, M.
From Journal of Chromatography, Biomedical Applications (1985), 338(1), 113-22. Language: English, Database: CAPLUS, DOI:10.1016/0378-4347(85)80075-X

A HPLC assay for the detn. of isoniazid [54-85-3], acetylisoniazid [1078-38-2], acetylhydrazine [1068-57-1], and diacetylhydrazine [3148-73-0] (plasma and urine) was developed. The m-chlorobenzoyl derivs. of isoniazid, acetylhydrazine, and the internal std. propionylhydrazine were prepd., sepd. on a RP-18 column, and detected at 220 nm. Acetylisoniazid, diacetylhydrazine, and the internal std. dipropionylhydrazine were converted to isoniazid, acetylhydrazine, and propionylhydrazine by acidic hydrolysis and subsequently derivatized with m-fluorobenzoyl chloride, sepd. on a RP-18 column and detected at 220 nm. The lower limits of detection in plasma are acetylhydrazine 0.5 μM, isoniazid 1.0 μM, diacetylhydrazine 1.0 μM and acetylisoniazid 2.0 μM, and in urine, acetylhydrazine 10 μM, isoniazid 15 μM, diacetylhydrazine 20 μM, and acetylisoniazid 40 μM. This method is sensitive, reproducible, accurate, and precise and well suited for detailed pharmacokinetic studies.

~8 Citings

33. Coulometric determination of thiols and hydrazines with electrogenerated iodine in methanol in the presence of potassium acetate

By Pastor, Tibor J.; Vajgand, Vilim J.; Antonijevic, Vojka V.
From Mikrochimica Acta (1983), 3(3-4), 203-11. Language: English, Database: CAPLUS, DOI:10.1007/BF01497611

Conditions were established for the quant. electrochem. generation of I in MeOH in the presence of KOAc. The conditional redox potentials of the I/iodide system in the same supporting electrolyte were detd. With increasing concn. of KOAc in the solns., the conditional redox potentials of the I/iodide couple were only negligibly decreased. In the presence of $NaClO_4$ the redox potentials were noticeably increased. Anodically generated I was applied to coulometric titrn. of thiols and hydrazines. The error of the detns. was ≤±2%.

~7 Citings

34. Selectivity and information content of microchemical detection of hydrazines with selenious acid and 1-naphthylamine

By Grdinic, Vladimir; Medic-Saric, Marica; Oresic, Laila Stefanini
From Acta Pharmaceutica Jugoslavica (1982), 32(3), 201-7. Language: English, Database: CAPLUS

The selectivity of the spot-test technique for detecting hydrazines by using selenious acid and 1-naphthylamine was tested on 113 org. substances. The selectivity values were calcd. by the information content. The selectivity on Dowex HCR resin medium was very high, and substances such as alkyl hydrazines, phenols, sulfonic acids, aldehydes, amino acids, esters, alcs., and amides do not interfere. The test is useful for discriminating alkyl and aryl hydrazides, and can be used for the identification of hydrazines in the presence of hydrazides.

~0 Citings

35. 4-Dimethylaminobenzaldehyde as a photometric reagent for determination of carboxylic acid hydrazides

By Veselov, V. Ya.; Urovskii, L. F.; Grekov, A. P.
From Zhurnal Analiticheskoi Khimii (1983), 38(1), 115-19. Language: Russian, Database: CAPLUS

Carboxylic acid hydrazides were detd. by reacting 1-10 mg analyte with ~0.1M 4-$Me_2NC_6H_4CHO$ in 3 mL 2:1 alc.-H_2O at lab. temp. for 15 min, further reaction with 12 mL of HCl soln. (pH from -0.1 to 1.2, depending on the carboxylic acid) for 30 min, and measuring the absorbance at 457 nm or by using a blue optical filter. The relative std. deviation were 0.007-0.034.

~0 Citings

36. Fluorometric measurement of furfural and 5-hydroxymethylfurfural

By Walmsley, Trevor A.; Lever, Michael
From Analytical Biochemistry (1982), 124(2), 446-51. Language: English, Database: CAPLUS, DOI:10.1016/0003-2697(82)90063-X

Zn(II) forms highly fluorescent chelates with the aroyl hydrazones of furfural and 5-hydroxymethylfurfural, with the latter being more fluorescent than the former. The choice of arom. acid hydrazide (aroyl hydrazine) as anal. reagents for furfurals was examd.: 4-toluenesulfonic acid hydrazide was the most sensitive reagent examd., giving a UV fluorescence 10-fold as sensitive as 4-hydroxybenzoic acid hydrazide (PAHBAH). More convenient visible fluorescence was given by PAHBAH and related compds., and these are capable of detecting <500 pmol 5-hydroxymethylfurfural. The condensation reaction is complete in 30 mM HCl-EtOH within 2 min at 60°, and the stable product forms the fluorescent chelate on mixing with a Zn-diethanolamine soln. in EtOH.

~0 Citings

37. Determining the concentration of reducing agents

By Tosk, Jeffrey M.
From U.S. (1981), US 4287027 A 19810901, Language: English, Database: CAPLUS

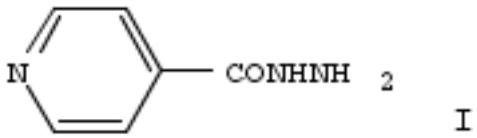
Strong reducing agents, e.g., hydrazine [302-01-2] and hydrazine-contg. compds., were detd. by measuring the electrode potential created by an oxidn.-redn. reaction occurring at an electrode assembly having an active electrode formed from a mixt. of finely divided Pt and PtO. The electrodes were placed within a housing having an inlet and outlet and the fluid contg. the reducing agent was passed through the housing to contact the electrodes. E.g., 1 μg acetylhydrazine [1068-57-1]/μL in pH 7.00 buffer was introduced as a 10 μL sample into the detector and the electrode potential detd.

~1 Citing

38. Tissue distribution of isoniazid and its metabolites in rats

By Kaneo, Yoshiharu; Kubo, Hiroaki; Tabata, Tetsuro; Matsuyama, Kenji; Noda, Atsuko; Iguchi, Sadao
From Journal of Pharmacobio-Dynamics (1981), 4(8), 590-5. Language: English, Database: CAPLUS, DOI:10.1248/bpb1978.4.590

Distribution of isoniazid and its metabolites was obsd. in the liver, kidney, lung and plasma after the s.c. administration of isoniazid (I) [54-85-3] to rats. The tissue levels of isoniazid, acetylisoniazid [1078-38-2], acetylhydrazine [1068-57-1], 1,2-diacetylhydrazine [3148-73-0] and hydrazine [302-01-2] were detd. by mass fragmentog. using a gas chromatograph-mass spectrometer equipped with a multiple ion detector-peak matcher. Using the compds. labeled with a stable isotope as an internal std., namely the isotope diln. method, made it possible to est. trace amts. of these metabolites in the tissues. The amt. of hydrazine was much less than the other hydrazines, but the metabolite which is well known as a mutagen, could be successfully detected in the tissues and plasma. The greater part of free hydrazine is formed through a direct hydrolysis of isoniazid. The isoniazid-hydrolyzing activity was found to be significantly higher in the liver homogenate. This suggested that hydrazine formation is mainly cause by hepatic hydrolysis.



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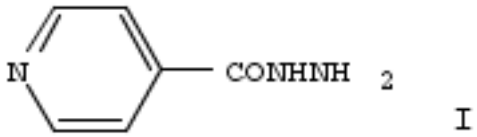
~4 Citings

39. Determination of isoniazid and its hydrazino metabolites acetylisoniazid, acetylhydrazine, and diacetylhydrazine in human plasma by gas chromatography-mass spectrometry

By Lauterburg, Bernhard H.; Smith, Charles V.; Mitchell, Jerry R.
From Journal of Chromatography, Biomedical Applications (1981), 224(3), 431-8. Language: English, Database: CAPLUS, DOI:10.1016/S0378-4347(00)80216-9

A gas chromatog.-mass spectrometric assay for isoniazid (I) [54-85-3] and its hydrazino metabolites, acetylhydrazine [1068-57-1] and diacetylhydrazine [3148-73-0], in human plasma was developed. The trimethylsilyl derivs. of diacetylhydrazine and acetylisoniazid and of the benzaldehyde hydrazones of acetylhydrazine and isoniazid were sepd. on a 1% OV-17 column and quantitated by single ion monitoring using a LKB 9000 mass spectrometer. Deuterated analogs served as internal stds. The method is well suited for the detn. of the hepatotoxic hydrazino metabolites of isoniazid in human plasma following an oral therapeutic dose of isoniazid.



I

~4 Citings

40. Coulometric titrations of hydrazines with electrically generated bromine in acetic acid

By Pastor, T.; Vajgand, V.; Antonijevic, V.; Ciric, I.
Edited By:Pungor, Erno; Buzas, I
From Coulom. Anal., Conf. (1979), 289-98. Language: English, Database: CAPLUS

The conditions for the coulometric detns. of small amts. of hydrazine with electrochem. generated Br in glacial HOAc were investigated. Direct coulometric method in 0.9M KOAc or NaOAc soln. gives good results when the sample soln. is added to the anolyte only after 90-5% of the theor. required amt. of the reagent had been generated. The presence of water in the anolyte up to 4% does not appreciably affect the accuracy of detns. However, the presence of Ac_2O in the anolyte even in trace amts. makes the detn. of this compd. impossible. The reaction of hydrazine with Br in 0.2M $NaClO_4$ soln. in HOAc is slow. Direct coulometric titrn. gives good results in detn. of hydrazine, methylhydrazine, and acetic acid hydrazide, while a back-titrn. method was successfully applied in detn. of the benzoic acid hydrazide.

~0 Citings

41. Bilirubin determination

By Gindler, E. Melvin
From U.S. (1978), US 4115064 A 19780919, Language: English, Database: CAPLUS

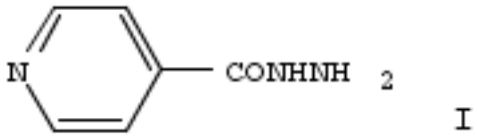
In the detn. of total (free and conjugated serum) bilirubin with diazotized sulfanilic acid, total bilirubin is measured under conditions in which the reagent reacts with both forms, and a 2nd measurement is made under conditions in which the reagent reacts only with bilirubin glucuronide. To carry out this 2nd reaction, the residual reagent is destroyed with a combination of N_2H_4 and acetylhydrazide. Thus, a N_2H_4-hydrazide soln. is prepd., preferably in situ, by mixing 62.5 mL N_2H_4, 125 mL iso-PrOH, and 62.5 mL EtOAc, allowing to stand 2 h at room temp., refluxing 1 h, adding H_2O to 450 mL, mixing with 1 g EDTA, and adding H_2O to 500 mL. Direct bilirubin is detd. by mixing 0.200 mL serum with 2.00 mL 0.05M HCl and 0.100 mL diazotized sulfanilic acid color reagent. Exactly 7 min later, 0.100 mL N_2H_4/hydrazide reagent is added, followed by 1.0 mL alk. reagent, and the absorbance is measured at 600 nm. For total bilirubin, 0.200 mL serum is mixed with 2.00 mL accelerator soln. [7-(2,3-dihydroxypropyl)theophylline and NaOAc). Exactly 7 min later, 0.100 mL N_2H_4/hydrazide is added, followed by alk. reagent and spectrometric detn.

~0 Citings

42. Quantitative determination of hydrazines derived from isoniazid in patients. I

By Noda, Atsuko; Goromaru, Tsuyoshi; Matsuyama, Kenji; Sogabe, Keizo; Hsu, Kuang-Yang; Iguchi, Sadao
From Journal of Pharmacobio-Dynamics (1978), 1(2), 132-41. Language: English, Database: CAPLUS, DOI:10.1248/bpb1978.1.132

Isoniazid (I) [54-85-3] and its metabolites, including the mutagen hydrazine [302-01-2], were detd. in the urine of patients 8 h after oral administration of I. Gas chromatog.-mass spectrometric methods were used after extn. of the urine samples with various solvents. Derivatization into trimethylsilylate after hydrazone formation with benzaldehyde; utilization of benzoic acid hydrazide as internal std. for gas chromatog. of unchanged I, acetylisoniazid [1078-38-2], and diacetylhydrazine [3148-73-0] were some of the novelties of the method. Hydrazine-^{15}N was used as the internal std. for mass fragmantog. of free hydrazine and monoacetylhydrazine [1068-57-1]. Concn. ranges of calibration curves were 0.5-2.5, 0.8-5.6, and 8.0-40.0 μg/mL for hydrazine, monoacetylhydrazine, and diacetylhydrazine, resp. Std. deviations for the anal. are given. Hydrazine (1 μg/mL) isolated from the urine gave pos. results in the Ames mutagenesis assay using rat liver homogenate.



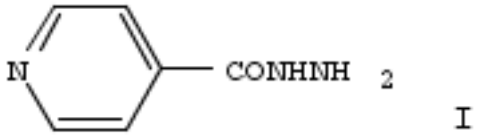
I

~1 Citing

43. Determination of hydrazine metabolites of isoniazid in human urine by gas chromatography

By Timbrell, John A.; Wright, James M.; Smith, Clare M.
From Journal of Chromatography (1977), 138(1), 165-72. Language: English, Database: CAPLUS, DOI:10.1016/S0021-9673(00)98007-5

A method is described for the detn. of isoniazid (I) [54-85-3], acetylisoniazid [1078-38-2], acetylhydrazine [1068-57-1], diacetylhydrazine [3148-73-0], and hydrazine [302-01-2] in urine. I, acetylhydrazine and hydrazine are reacted in aq. soln. with p-chlorobenzaldehyde [104-88-1] to form hydrazones. Following the addn. of appropriate internal stds., these hydrazones are then extd. into an org. solvent and detd. by gas chromatog. using a nitrogen-sensitive detector. Acetylisoniazid and diacetylhydrazine are detd. similarly after hydrolysis to I and acetylhydrazine, resp.



I

~10 Citings

44. Spectrophotometric determination of hydrazides with 2,3-dichloro-1,4-napthoquinone

By Plaizier, J. A.; Van Damme, J. G.; De Neve, R. E.
From Analytical Chemistry (1976), 48(11), 1536-8. Language: English, Database: CAPLUS, DOI:10.1021/ac50005a029

A new colorimetric method for detg. hydrazides by using alk. 2,3-dichloro-1,4-naphthoquinone is tested. The method is specific for hydrazides not substituted on the β N atom, excluding hydrazine, hydrazone derivs., ureum, and semicarbazide. Arom. hydrazides conform to Beer's law in the range 3 × 10-5-2 × 10-4M. Dihydrazide derivs. can only qual. be detd. except oxalic acid dihydrazide. The reaction mechanism proposed by inspecting the uv spectra is the condensation between a ketone and a hydrazide to a hydrazone, tautomerizing in alk. medium.

~3 Citings

45. Determination of isoniazid and its metabolites acetylisoniazid, monoacetylhydrazine, diacetylhydrazine, isonicotinic acid, and isonicotinylglycine in serum and urine

By Ellard, G. A.; Gammon, Patricia T.; Wallace, Susan M.
From Biochemical Journal (1972), 126(3), 449-58. Language: English, Database: CAPLUS, DOI:10.1042/bj1260449

Specific chem. and fluorimetric methods were described for the detn. of isoniazid (I) [54-85-3] and acetylisoniazid [1078-38-2], and chem. methods for the detn. of monoacetylhydrazine [1068-57-1], diacetylhydrazine [3148-73-0], isonicotinic acid [55-22-1], and isonicotinylglycine [2015-20-5], in serum and urine. These methods could detn. 0.005 and 0.05 μg I/ml in serum and urine, resp. The stability of these compds. was studied in serum and urine and a method devised to decrease their decompn. in serum.

~11 Citings

46. Spectrophotometric determination of acid hydrazides via nickel(II)-catalyzed hydroxamic acid formation

By Munson, James W.; Connors, Kenneth A.
From Journal of Pharmaceutical Sciences (1972), 61(2), 211-13. Language: English, Database: CAPLUS, DOI:10.1002/jps.2600610214

The reaction of phenyl acetate with hydroxylamine to form acetohydroxamic acid is catalyzed by Ni(II). Kinetic studies revealed that of the two steps in this process (the first being formation of O-acetylhydroxylamine and the second is conversion to acetohydroxamic acid), it is the second step that is catalyzed by Ni(II). Formation of a five-membered chelate ring between Ni(II) and O-acetylhydroxylamine was postulated to account for the catalysis. This hypothesis suggested that acid hydrazides, which are structurally similar to O-acetylhydroxyl-amines, should also undergo hydroxylaminolysis catalyzed by Ni(II). This predicted catalysis was obsd. with 4 acid hydrazides. A spectrophotometric method for acid hydrazides was developed based upon their Ni(II)-catalyzed conversion to hydroxamic acids, followed by treatment with ferric ion to give the colored ferric hydroxamate complex. Isonicotinic acid hydrazide can be detd. at 10-4-10-2M in aq. solns. without interference from isonicotinic acid.

~5 Citings

47. Detection of acyl hydrazides on paper chromatograms

By LaRue, Thomas A.
From Journal of Chromatography (1968), 32(4), 784-5. Language: English, Database: CAPLUS, DOI:10.1016/S0021-9673(01)80571-9

The hydrazides are detected by spraying chromatograms with 0.25% aq. 2,4,6-trinitrobenzenesulfonic acid. The hydrazides appear within 3 min. as red or red-brown spots. The chromatograms were stable for >30 days if stored in the dark. This detection method is rapid and simple and avoids the NH3 vapors which render unpleasant the prior method in which picryl chloride in EtOH is sprayed onto the chromatograms and exposed to NH3 vapor. The Rf values are given for 23 hydrazides sepd. with 3 different solvents, i.e., 17:3 iso-PrOH-H2O, the upper phase of 4:1:5 BuOH-HOAc-H2O, and 1.4M K phosphate pH 7.0 buffer. The sensitivities with the resp. solvents were 0.5-2.0, 5-10, and 0.5-2.0 μg. Among the acyl hydrazides sepd. were acetic, p-aminobenzoic, o-cresotic, indole-3-acetic, and salicylic hydrazides and adipic, oxalic, and succinic dihydrazides.

~0 Citings

48. The effect of pyrazinamide and rifampicin on isoniazid metabolism in rats

By De Rosa Helene J; Baldan Helen M; Brunetti Iguatemy L; Ximenes Valdecir F; Machado Rosangela G P
From Biopharmaceutics & drug disposition (2007), 28(6), 291-6, Language: English, Database: MEDLINE

Hepatotoxicity is the main concern during tuberculosis chemotherapy with the first-line drugs isoniazid (INH), rifampicin (RMP) and pyrazinamide (PYR). Since these hepatotoxic events have been associated with INH metabolites, the study aimed to measure the area under curve (AUC) parameter for INH and its metabolites acetylisoniazid (AcINH), hydrazine (Hz) and acetylhydrazine (AcHz), when groups of rats were pre-treated for 21 days with INH alone or in combination with RMP and/or PYR, in the following amounts per kg body weight: INH 100 mg; INH 100 mg + RMP 100 mg; INH 100 mg + PYR 350 mg; INH 100 mg + PYR 350 mg + RMP 100 mg. It was found that co-administration of RMP, PYR and RMP + PYR caused a significant decrease in the AUC for INH. Co-administration of PYR was the only treatment that caused a significant increase in the AUC for Hz and a decrease in the AUC for its acetylated product AcHz. The AUC for AcINH was not significantly altered in any experimental group. In conclusion, the increased metabolism of INH in all the drug combinations and the significantly higher production of Hz in the group INH + PYR might be linked with exacerbated hepatotoxic effects of these drug associations.

~2 Citings

49. Simultaneous kinetic-spectrophotometric determination of hydrazine and acetylhydrazine in micellar media using the H-point standard addition method

By Afkhami Abbas; Zarei Ali Reza
From Analytical sciences : the international journal of the Japan Society for Analytical Chemistry (2004), 20(8), 1199-203, Language: English, Database: MEDLINE

The H-point standard addition method (HPSAM), based on a spectrophotometric measurement for the simultaneous determination of hydrazine and acetylhydrazine, is described. This method is based on the difference between the rates of their reactions with N,N-dimethylaminobenzaldehyde (DAB) in the presence of sodium dodecyl sulfate (SDS) in acidic media. The results showed that hydrazine and acetylhydrazine could be determined simultaneously in the range of 0.020 - 0.70 and 0.20 - 5.0 mg L(-1), respectively. Under the working conditions, the proposed method was successfully applied to the simultaneous determination of hydrazine and acetylhydrazine in several synthetic mixtures and plasma and water samples.

~0 Citings

50. Role of hydrazine in the mechanism of isoniazid hepatotoxicity in rabbits

By Sarich T C; Youssefi M; Zhou T; Adams S P; Wall R A; Wright J M
From Archives of toxicology (1996), 70(12), 835-40, Language: English, Database: MEDLINE

Isoniazid (INH) continues to be a highly effective drug in the chemoprophylaxis and treatment of tuberculosis; however, its use is associated with hepatotoxicity (predominantly hepatic necrosis) in 1-2% of individuals. The INH metabolites, acetylhydrazine and hydrazine, have each been implicated as the causative hepatotoxin in INH-induced hepatotoxicity. Using a model of INH-induced hepatotoxicity in rabbits, in which INH-induced hepatotoxicity manifests as hepatic necrosis, hepatic steatosis (hepatic fat accumulation) and hypertriglyceridaemia (elevated plasma triglycerides), we compared the severity of these measures of toxicity with plasma levels of INH, acetylhydrazine and hydrazine. Plasma INH and acetylhydrazine were not correlated with markers of INH-induced hepatic necrosis or fatty changes. Plasma hydrazine at 32 h was correlated significantly with plasma argininosuccinic acid lyase (ASAL, a sensitive marker of hepatic necrosis) activity as area under the curve ($r2 = 0.54$, $P < 0.002$) and log plasma ASAL activity at 48 h after the first dose of INH ($r2 = 0.53$, $p < 0.005$), but not with fatty changes. These results show in this model of INH-induced hepatotoxicity in rabbits that hydrazine, and not INH or acetylhydrazine, is most likely involved in the pathogenic mechanism of hepatic necrosis.

~5 Citings

51. Effects of rifampicin on pharmacokinetics of isoniazid and its metabolite acetylhydrazine in rats

By Zhang R L; Wang Z Y; Li D; Cheng W B
From Zhongguo yao li xue bao = Acta pharmacologica Sinica (1992), 13(6), 494-6, Language: English, Database: MEDLINE

After i.v. and i.p. injections of isoniazid (Iso) 40 mg.kg-1 to male Wistar rats, the plasma levels of Iso, acetylisoniazid (AcIso), and acetylhydrazine (AcHz) were determined by spectrophotometric method and gas chromatography. The results suggested that the pharmacokinetic behavior of Iso in rats belonged to a 2-compartment model. The plasma levels of AcHz in rifampicin (Rif 30 mg.kg-1)-pretreated rats were lowered vs the control ($P < 0.05$ or < 0.01). The T1/2 of AcHz was shortened by Rif (control group 3.3 h, Rif-pretreated group 1.4 h) after i.v. injection of AcHz 10 mg.kg-1 to rats and the results showed that AcHz was converted to its active metabolites quickly by increasing the oxidative elimination rate of AcHz, which is related to the higher incidence of liver necrosis caused by Iso and Rif in combination.

~0 Citings

52. Determination of hydrazine in biofluids by capillary gas chromatography with nitrogen-sensitive or mass spectrometric detection

By Preece N E; Forrow S; Ghatineh S; Langley G J; Timbrell J A
From Journal of chromatography (1992), 573(2), 227-34, Language: English, Database: MEDLINE

Plasma and liver levels of hydrazine were determined at 10, 30, 90 and 270 min in rats given 0.09, 0.27, 0.84 and 2.53 mmol of hydrazine per kg body weight orally by capillary gas chromatography-mass spectrometry of its pentafluorobenzaldehyde adduct (DFBA, m/z 388) using selected ion monitoring with 15N2-labelled hydrazine as the internal standard (adduct, m/z 390). The mean half-life for hydrazine in the plasma was approximately 2 h but varied with dose. Urinary excretion (0-24 h) of hydrazine and its metabolite acetylhydrazine were determined employing nitrogen-phosphorus detection of the adducts utilising a novel internal standard, pentafluorophenylhydrazine, the adduct of which structurally resembles DFBA. The fraction of the original dose excreted as hydrazine (and acetylhydrazine) declined with increasing dose.

~0 Citings

53. Identification of novel hydrazine metabolites by 15N-NMR

By Preece N E; Nicholson J K; Timbrell J A
From Biochemical pharmacology (1991), 41(9), 1319-24, Language: English, Database: MEDLINE

15N-NMR has been used to study the metabolism of hydrazine in rats in vivo. Single doses of [15N2]hydrazine (2.0 mmol/kg: 98.6% g atom) were administered to rats and urine collected for 24 hr over ice. A number of metabolites were detected by 15N-NMR analysis of lyophilized urine. Ammonia was detected as a singlet at 0 ppm and unchanged [15N2]hydrazine was present in the urine detectable as a singlet at 32 ppm. Peaks were observed at 107 and 110 ppm which were identified as being due to the hydrazido nitrogen of acetylhydrazine and diacetylhydrazine, respectively. A resonance at 85 ppm was ascribed to carbazic acid, resulting from reaction of hydrazine with carbon dioxide. A singlet detected at 316 ppm was thought to be due to the hydrazono nitrogen of the pyruvate hydrazone. The resonance at 56 ppm was assigned to 15N-enriched urea, this together with the presence of ammonia indicates that the N-N bond of hydrazine is cleaved in vivo, possibly by N-oxidation, and the resultant ammonia is incorporated into urea. A doublet centred at 150 ppm and a singlet at 294 ppm were assigned to a metabolite which results from cyclization of the 2-oxoglutarate hydrazone. Therefore 15N-NMR spectroscopic analysis of urine has yielded significant new information on the metabolism of hydrazine.

~0 Citings

54. Inhibition of leukotriene omega-oxidation by isonicotinic acid hydrazide (isoniazid)

By Parthe S; Hagmann W
From European journal of biochemistry (1990), 187(1), 119-24, Language: English, Database: MEDLINE

Metabolism of leukotrienes via omega-oxidation represents a major degradative and inactivating pathway of these biologically active icosanoids. Isonicotinic acid hydrazide (isoniazid) inhibited this process in rats in vivo, in the isolated perfused rat liver, and in hepatic microsomes. The in vivo catabolism of leukotriene E4 via N-acetyl-leukotriene E4 to its omega-oxidized metabolites was inhibited by 50% or 71% using single intravenous isoniazid doses of 0.6 mmol or 1.0 mmol/kg body mass, respectively. Isoniazid interfered with leukotriene catabolism at the initial omega-oxidation step, resulting in an accumulation of N-acetyl-leukotriene E4. Analogous although weaker inhibition of leukotriene omega-oxidation in vivo was observed by pretreatment with isonicotinic acid 2-isopropylhydrazide and monoacetyl hydrazine. In the isolated perfused liver, isoniazid at concentrations varying over 0.2-10 mM decreased the omega-oxidation of cysteinyl leukotrienes dose-dependently by up to 94%. omega-Oxidation of both leukotriene E4 and leukotriene B4 by rat liver microsomes was inhibited by isoniazid, isonicotinic acid 2-isopropylhydrazide, and monoacetyl hydrazine with half-maximal concentrations in the range of 5-15 mM. Our measurements indicate that the impairment of leukotriene omega-oxidation by isoniazid involves both cytochrome-P450-dependent enzyme systems responsible for omega-oxidation of leukotriene E4 and leukotriene B4. In effect, under isoniazid treatment one can expect a prolongation of the proinflammatory actions of endogenously produced leukotrienes.

~2 Citings

55. Analysis of isoniazid, acetylhydrazine and [15N2]acetylhydrazine in serum by capillary gas chromatography-ammonia chemical ionization mass spectrometry

By Karlaganis G; Peretti E; Lauterburg B H
From Journal of chromatography (1987), 420(1), 171-7, Language: English, Database: MEDLINE

~0 Citings

56. Determination of the isoniazid metabolite monoacetylhydrazine in urine by high-performance liquid chromatography

By Jenner P J; Ellard G A
From Journal of chromatography (1987), 415(1), 188-96, Language: English, Database: MEDLINE

~0 Citings

57. Effect of isoniazid on folic acid status in Swiss mice and rats

By Bhalerao E B; Bhide S V
From Indian journal of physiology and pharmacology (1985), 29(3), 133-8, Language: English, Database: MEDLINE

Effect of isoniazid (INH) and its metabolites e.g. mono and diacetyl hydrazines (MAH and DAH respectively) was studied on circulating and tissue folates in mice (a species susceptible to INH tumorigenicity) and rats (a species resistant to INH carcinogenicity). It was observed that ip injection of INH, MAH and mydrazine sulfate (HS, 0.18 mg/g) decreased blood folates in mice while only HS and MAH decreased blood folates in rats. DAH had no effect on blood folates of mice or rats. Long term feeding of MAH and HS to mice decreased blood folates in treated mice at the age of 17 and 22 months respectively.

~0 Citings

58. Levels of acetyl hydrazines and rate of acetylation of isoniazid in adult tuberculosis patients

By Bhalerao E B; Bhide S V
From Indian journal of physiology and pharmacology (1985), 29(2), 83-8, Language: English, Database: MEDLINE

Patients suffering from pulmonary tuberculosis were investigated for the levels of isoniazid (INH) and its metabolites viz. acetyl-INH, mono and diacetyl hydrazines and ammonia. It was observed that 50% of the patients are slow inactivators of INH and almost all show an increase in circulating levels of NH3 at 6 hrs. Mono and diacetyl hydrazine levels in blood and urine were detectable in all the patients up+o 24 hrs though the maximum levels were observed at different intervals after the intake of INH.

~0 Citings

59. Determination of isoniazid, acetylisoniazid, acetylhydrazine and diacetylhydrazine in biological fluids by high-performance liquid chromatography

By von Sassen W; Castro-Parra M; Musch E; Eichelbaum M
From Journal of chromatography (1985), 338(1), 113-22, Language: English, Database: MEDLINE

A high-performance liquid chromatographic assay for the determination of isoniazid, acetylisoniazid, acetylhydrazine and diacetylhydrazine (plasma and urine) was developed. The m-chlorobenzoyl derivatives of isoniazid, acetylhydrazine and the internal standard propionylhydrazine were prepared, separated on a RP-18 column and detected at 220 nm. Acetylisoniazid, diacetylhydrazine and the internal standard dipropionylhydrazine were converted to isoniazid, acetylhydrazine, and propionylhydrazine by acidic hydrolysis and subsequently derivatized with m-fluorobenzoyl chloride, separated on a RP-18 column and detected at 220 nm. The lower limits of detection in plasma are acetylhydrazine 0.5 nmol/ml, isoniazid 1.0 nmol/ml, diacetylhydrazine 1.0 nmol/ml and acetylisoniazid 2.0 nmol/ml, and in urine, acetylhydrazine 10 nmol/ml, isoniazid 15 nmol/ml, diacetylhydrazine 20 nmol/ml and acetylisoniazid 40 nmol/ml. This method is sensitive, reproducible, accurate and precise; therefore, it is well suited for detailed pharmacokinetic studies.

~0 Citings

60. A study of the effects of rifampicin on isoniazid metabolism in human volunteer subjects

By Timbrell J A; Park B K; Harland S J
From Human toxicology (1985), 4(3), 279-85, Language: English, Database: MEDLINE

The effect of rifampicin on the metabolism of isoniazid in human volunteer subjects has been investigated. The urinary metabolites of isoniazid after a single dose and after six daily doses of isoniazid plus rifampicin were examined. The isoniazid-rifampicin combination clearly increased the ratio of urinary 6-beta-hydroxycortisol to 17-hydroxycorticosteroids, indicating that induction of the microsomal enzymes had occurred. However, no significant changes in the urinary metabolites of isoniazid were detected, and therefore it is not possible to predict the effect of rifampicin on isoniazid hepatotoxicity.

~0 Citings

61. Urinary metabolic profile of isoniazid in patients who develop isoniazid-related liver damage

By Timbrell J A; Wright J M
From Human toxicology (1984), 3(6), 485-95, Language: English, Database: MEDLINE

The urinary metabolite profile of isoniazid has been studied in patients receiving the drug as therapy for tuberculosis and the profile in patients suffering liver damage due to isoniazid compared with that in control patients. There were no consistent differences between control patients and those suffering liver damage in the excretion of isoniazid metabolites. It may be that susceptibility to the hepatotoxicity of isoniazid is not due to metabolic differences, although a number of other possible explanations are discussed. It is not at present possible to predict which patients will be susceptible from metabolic studies.

~1 Citing

62. A double-blind clinical trial of isoniazid in Huntington disease

By Perry T L; Wright J M; Hansen S; Thomas S M; Allan B M; Baird P A; Diewold P A
From Neurology (1982), 32(4), 354-8, Language: English, Database: MEDLINE

Isoniazid (INH) was given to nine patients with Huntington disease (HD) in a double-blind, placebo-controlled crossover trial. In an earlier open trial, three of six patients had improved, and one of them remained improved after 7 years on INH. Only one patient benefited in the present trial. All patients excreted small amounts of hydrazine in their urine while taking INH, and it is this INH metabolic that elevates GABA content in brain. GABA concentrations were markedly increased in CSF during INH therapy. Lack of clinical improvement in most HD patients despite elevation of brain GABA content suggests that in the minority who are benefited, INH may be acting by some mechanism other than increase of GABAergic neuronal function.

~4 Citings