Ranolazine and three metabolites were simultaneously determined in human plasma.
5  
Quantification of carbamazepine and its active metabolite by direct injection of human milk serum using liquid chromatography tandem ion trap mass spectrometry

Original Research Article

Pages 17-23

B.R. Lopes, J.C. Barreiro, P.T. Baradí, Q.B. Cass

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Highlights

► The use of RAM column for extraction and quantification. ► No methods have been described for direct injection of human milk. ► Drug and active metabolite found in milk in high concentration.

6  
Degradation of the tricyclic antipsychotic drug chlorpromazine under environmental conditions, identification of its main aquatic biotic and abiotic transformation products by LC–MS and their effects on environmental bacteria

Original Research Article

Pages 24-38

Christoph Trautwein, Klaus Kümmerer

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Highlights

► So far no environmental transformation studies of antipsychotic drug Chlorpromazine (CPR). ► Investigation of aerobic/anaerobic biodegradability (OECD/ISO) and abiotic photolysis of CPR. ► LC–MS² and special software found transformation products with low intensity in difficult matrix. ► CPR not readily/inheritably biodegradable; 3 aerobic and 1 anaerobic product; bacterial toxicity. ► CPR photolysis revealed 57 photoproducts; 3 main photoproducts were structurally elucidated.

7  
Determination of sinomenine sustained-release capsules in healthy Chinese volunteers by liquid chromatography–tandem mass spectrometry

Original Research Article

Pages 39-43

Meng-Xiang Su, Min Song, De-Zhu Sun, Hua Zhao, Xiao Gu, Ling Zhu, Xiao-Le Zhan, Zhong-Nan Xu, Ai-Dong Wen, Tai-Jun Hang

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Highlights

► LC–MS/MS quantification of sinomenon in human plasma was developed. ► This method achieved a LLOQ as low as 0.5 ng/mL with a simple pretreatment procedure. ► Clinical pharmacokinetic of sinomenine sustained-release capsules was characterized. ► The accumulation of sinomenine in body was observed after repeated dosing.

8  
Development and validation of a sensitive LC–MS/MS method for the simultaneous quantitation of theophylline and its metabolites in rat plasma

Original Research Article

Pages 44-49

Jung-woo Chae, Dong-hyun Kim, Byung-yo Lee, Eun jung Kim, Kwang-il Kwon

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Highlights

► Theophylline and its metabolites were validated simultaneously in rat plasma. ► Protein precipitation was applied in an assay using LC–MS/MS. ► The combination of LC separation and the mass parameters shorten HPLC run times. ► The assay demonstrated a high degree of suitable precision and accuracy. ► It makes the method practical for cost-effective, high-throughput sample analyses.

9  
Purification and characterization of catalase from sprouted black gram (Vigna mungo) seeds

Original Research Article

Pages 50-54

Sai Srikar Kandukuri, Ayesha Noor, S. Shiva Ranjini, M.A. Vijayalakshmi

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Highlights

► Catalase content was estimated in black gram sprouts, seedlings and leaves. ► Day 4 sprouts showed the maximum catalase activity. ► A single step purification of catalase was achieved using Seph 4B-IDA-Zn(II). ► Purity of catalase was confirmed quantitatively by SDS-PAGE and Zymogram analysis. ► Kinetic and stability studies were performed with purified catalase.
On-line simultaneous deproteinization of biological samples and trace enrichment of three dipine series using a poly(N-isopropylacrylamide-co-ethylenglycol dimethacrylate) monolithic column

**Highlights**

- A porous poly(N-isopropylacrylamide-co-ethylenglycol dimethacrylate) [poly(NIPAAm-co-EDMA)] monolithic column was prepared by in situ free-radical polymerization.  
- The prepared poly(NIPAAm-co-EDMA) monolithic column showed excellent permeability and high selectivity, which was suitable for SPE pre-column.  
- The prepared poly(NIPAAm-co-EDMA) monolithic column was used as SPE sorbent to simultaneously clean up of protein and enrich of nifedipine, nitrendipine and resolpide in plasma and urine.  
- The sample pretreatment step was embedded into the LC chromatographic system and manual intervention was minimized.  
- The established method was also applied in clinical plasma studies.

Purification strategies, characteristics and thermodynamic analysis of a highly thermostable alkaline protease from a salt-tolerant alkaliphilic actinomycete, *Nocardiopsis alba* OK-5

**Highlights**

- A single step purification of a novel alkaline protease from salt tolerant alkaliphilic actinomycetes, *Nocardiopsis alba* strain OK-5 has been described.  
- Since the halophilic enzymes are difficult to purify, development of a simple purification procedure with good yield would be quite useful for purification of other extremozymes.  
- A detailed characterization of protease from actinomycetes has not been conducted and to the best of our knowledge there are no reports on the analysis of the thermodynamic and kinetic parameters of protease from salt tolerant alkaliphilic actinomycetes. Therefore, biochemical, thermodynamic and kinetic properties of extracellular protease would add significantly to the biocatalysis from this group of microbes.  
- The enzyme had high activity and significant stability at higher salt, temperature, pH and a range of metal ions. The enzyme also displayed extreme resistance against urea denaturation, oxidizing and reducing agents and surfactants, a finding which is rather unique and restricted to only few proteins.  
- The results would be significant on macromolecular stability and to explore biotechnological potential of enzymes from less attended halophilic actinomycetes.

A method for the simultaneous determination of mercapturic acids as biomarkers of exposure to 2-chloroprene and epichlorohydrin in human urine

**Highlights**

- Presentation of a human biomonitoring method for epichlorohydrin and 2-chloroprene.  
- Simultaneous determination of six mercapturic acids in human urine.  
- Validation of the method proved good sensitivity and accuracy.  
- The method enables for the first time human biomonitoring studies on 2-chloroprene.

Liquid chromatography and tandem mass spectrometry method for the quantitative determination of saxagliptin and its major pharmacologically active 5-monohydroxy metabolite in human plasma: Method validation and overcoming specific and non-specific binding at low concentrations

**Highlights**

- A liquid chromatography and tandem mass spectrometry (LC–MS/MS) method was developed and validated to simultaneously determine the concentrations of saxagliptin and its major active metabolite, 5-hydroxy saxagliptin.  
- The sample pre-treatment process was carefully controlled to disrupt DPP4-specific binding and non-specific binding observed at lower concentrations.  
- Under these chromatographic conditions, the isomers of saxagliptin and 5-hydroxy saxagliptin were chromatographically separated from saxagliptin and 5-hydroxy
saxagliptin. ► The assay has been used to support multiple clinical studies and regulatory approvals.

Evaluation of enantioselective binding of propanocaine to human serum albumin by ultrafiltration and electrokinetic chromatography under intermediate precision conditions
Hernández María Amparo Martínez-Gómez, Laura Escuder-Gilabert, Rosa María Villanueva-Camañas, Salvador Sagrado, María José Medina-Hernández
► Optimised experimental design reduces methodological errors. ► Statistical advantages and robust results.

Molecular imprinting based composite cryogel membranes for purification of anti-hepatitis B surface antibody by fast protein liquid chromatography
Rosenberger Sevgi Asliyuce, Lokman Uzun, Abbas Youssefi Rad, Serhat Unal, Ridvan Say, Adil Denizil
► Competitive adsorption of anti-HBs, total anti-HAV and total IgE were carried out. ► The MI-CMs can be used many times without any significant decrease in the capacity. ► The chromatographic purification performances of the MI-CMs were evaluated.

Quantitation of bentsyrepinine (Y101) in rat plasma by liquid chromatography tandem mass spectrometry: Application to pharmacokinetic study
Huirong Fan, Ruixing Li, Yuan Gu, Duanyun Si, Changxiao Liu
► The first LC–MS/MS method for quantitation of Y101 was established. ► The method provided good sensitivity (1 ng/mL for Y101). ► A simple one-step protein precipitation was chosen to pretreat samples. ► The method has been successfully applied to a pharmacokinetic study for the first time in rats.

A sensitive HPLC-based method to quantify adenine nucleotides in primary astrocyte cell cultures
Dhaval P. Bhatt, Xuesong Chen, Jonathan D. Geiger, Thad A. Rosenberger
► We describe a sensitive HPLC method to quantify adenine nucleotides in cell culture. ► Optimized ion-pair reagent provides reproducible separation of adenine nucleotides. ► Optimized derivatization to maximum yield and limit hydrolysis. ► Surpasses conventional
Determination of biomarkers of tobacco smoke exposure in oral fluid using solid-phase extraction and gas chromatography–tandem mass spectrometry

Original Research Article
Pages 116-122

Highlights
► First GC–MS/MS method for the determination of nicotine and metabolites in oral fluid samples. ► Excellent quantitation limits using only 0.2 mL of sample. ► Absolute recoveries higher than 85% for all compounds. ► Low limits allow monitoring tobacco smoke exposure in non-smoking individuals.

Determination of antimalarial compound, ARB-89 (7β-hydroxyartemisinin carbamate) in rat serum by UPLC/MS/MS and its application in pharmacokinetics

Original Research Article
Pages 129-129
Deepthi Pabbisetty, Anuradha Illendula, K.M. Muralleetharan, Amar G. Chitliboyna, John S. Williamson, Mitchell A. Avery, Bonnie A. Avery

Highlights
► Highly active 7β-hydroxy derivative of artemisinin is selected as a lead compound. ► High through put UPLC/MS/MS method is developed and validated for quantitation of the derivative in rat serum. ► This method can be used to explore the therapeutic potential of this derivative in the future. ► Oral bioavailability was improved than some of the existing artesinin analogs.

Regulatory control of glycopyrrolate in performance horses using validated UHPLC–MS–MS method

Original Research Article
Pages 130-137
M.J. Rumpier, R.A. Sams, P. Colahan

Highlights
► We develop and validate an LC–MS/MS method for glycopyrrolate in horse urine. ► We construct tolerance intervals for glycopyrrolate in urine and plasma for threshold limits. ► Urine to plasma concentration ratios of glycopyrrolate can enhance the regulatory control of glycopyrrolate. ► Renal clearance of glycopyrrolate in the horse can be estimated without volumetric urine collections.

Corrigendum

Page 148

Yuko Rönquist-Nii, Staffan Eksborg, Magnus Axelsson, Johan Harmenberg, Simon Ekman, Michael Bergqvist, Olof Beck