

Selected Articles on the Analysis of Drugs of Abuse in Seized Materials
(January - June 2022)

Case study: Identification and characterization of *N*-[2-(dimethylamino)cyclohexyl]-*N*-methylnaphthalene-2-carboxamide, a regiosomer of the synthetic opioid U10, M. Collins, D. Brown, S. Davies, B. Chan, B. Trotter, M. Moawad, K. Blakey, L. Collins-Brown, *Drug Testing and Analysis*, **2022**, 14, 188-195. <https://doi.org/10.1002/dta.3133>.

“Walking the nitrogen around the ring”: Chemical synthesis and spectroscopic characterization of novel 4-, 5-, 6-, and 7-azaindazole analogs of the synthetic cannabinoid receptor agonist MDMB-PINACA, R.M. Alam, J.J. Keating, *Drug Testing and Analysis*, **2022**, 14, 277–97.
<https://doi.org/10.1002/dta.3180>.

Identification of AD-18, 5F-MDA-19, and pentyl MDA-19 in seized materials after the class-wide ban of synthetic cannabinoids in China, C.M. Liu, Z.D. Hua, W. Jia, T. Li, *Drug Testing and Analysis*, **2022**, 14, 307–16. <https://doi.org/10.1002/dta.3185>.

Synthetic cannabinoid receptor agonists profile in infused papers seized in Brazilian prisons, T.B. Rodrigues, M.P. Souza, L. de Melo Barbosa, J. de Carvalho Ponce, L.F. Neves Júnior, M. Yonamine, J.L. Costa, *Forensic Toxicology*, **2022**, 40, 119–24. <https://doi.org/10.1007/s11419-021-00586-7>.

The metabolism of the synthetic cannabinoids ADB-BUTINACA and ADB-4en-PINACA and their detection in forensic toxicology casework and infused papers seized in prisons, R. Kronstrand, C. Norman, S. Vikingsson, A. Biemans, B. Valencia Crespo, D. Edwards, D. Fletcher, et al, *Drug Testing and Analysis*, **2022**, 14, 634–52. <https://doi.org/10.1002/dta.3203>.

Identification and characterization of novel synthetic cannabinoid ethyl-2-(1-(5-fluoropentyl)-1*H*-indole-3-carboxamido)-3,3-dimethylbutanoate (5F-EDMB-PICA), F. Xu, W. Wei, X. Shan, R. Wang, L. Liu, *Forensic Toxicology*, **2022**, 40, 163–72. <https://doi.org/10.1007/s11419-021-00605-7>.

Adulteration of low-*delta*-9-tetrahydrocannabinol products with synthetic cannabinoids: Results from drug checking services, M.C. Monti, J. Zeugin, K. Koch, N. Milenkovic, E. Scheurer, K. Mercer-Chalmers-Bender, *Drug Testing and Analysis*, **2022**, 14, 1026–39. <https://doi.org/10.1002/dta.3220>.

Thin-layer chromatography on silver nitrate-impregnated silica gel for analysis of homemade tetrahydrocannabinol mixtures, K. Tsujikawa, Y. Okada, H. Segawa, T. Yamamoto, K. Kuwayama, T. Kanamori, Y.T. Iwata, *Forensic Toxicology*, **2022**, 40, 125–31. <https://doi.org/10.1007/s11419-021-00592-9>.

Identification and structural characterization of three psychoactive substances, phenylpiperazines (PBPP and 3,4-CFPP) and a cocaine analogue (troparil), in collected samples, M. Popławska, E. Bednarek, B. Naumczuk, A. Błażewicz, *Forensic Toxicology*, **2022**, 40, 132–43.
<https://doi.org/10.1007/s11419-021-00597-4>.

Potential of chromatography and mass spectrometry for the differentiation of three series of positional isomers of 2-(dimethoxyphenyl)-*N*-(2-halogenobenzyl)ethanamines, O.V. Kupriyanova, V. A. Shevyrin, Y.M. Shafran, *Drug Testing and Analysis*, **2022**, 14, 1102–15.
<https://doi.org/10.1002/dta.3232>.

What’s in fake ‘Xanax’?: A dosage survey of designer benzodiazepines in counterfeit pharmaceutical tablets, K. Blakey, A. Thompson, A. Matheson, A. Griffiths, *Drug Testing and Analysis*, **2022**, 14, 525–30. <https://doi.org/10.1002/dta.3119>.

Methoxpropamine (MXPr) in powder, urine and hair samples: Analytical characterization and metabolite identification of a new threat, R. Goncalves, N. Castaing, C. Richeval, D. Ducint, K. Titier, E. Morvan, A. Grélard, A. Loquet, M. Molimard, *Forensic Science International*, **2022**, 333, 111215. <https://doi.org/10.1016/j.forsciint.2022.111215>.

Characterization and forensic identification of a novel cocaine charcoal smuggling matrix, U. Bretler, S. Shimron, S. Bretler, Y. Yizhakov, *Forensic Science International*, **2022**, 330, 111104. <https://doi.org/10.1016/j.forsciint.2021.111104>.

Determination of the enantiomeric composition of amphetamine, methamphetamine and 3,4-methylendioxy-N-Methylamphetamine (MDMA) in seized street drug samples from southern Germany, M. Losacker, S. Zörntlein, B. Schwarze, S. Staudt, J. Röhrich, C. Hess, *Drug Testing and Analysis*, **2022**, 14, 557–66. <https://doi.org/10.1002/dta.3118>.

Synthetic origin of illicit methylamphetamine in Australia: 2011–2020, H. Salouros, *Drug Testing and Analysis*, **2022**, 14, 427–38. <https://doi.org/10.1002/dta.3117>.

Monitoring methamphetamine in the United States: A two-decade review as seen by the DEA methamphetamine profiling program, S.G. Toske, T.D. McKibben, *Drug Testing and Analysis*, **2022**, 14, 416–26. <https://doi.org/10.1002/dta.3186>.

Impurity profiling of methamphetamine synthesized from α -phenylacetoacetonitrile (APAAN), D. Langone, B. Painter, C. Nash, M.R. Johnston, K.P. Kirkbride, *Drug Testing and Analysis*, **2022**, 14, 56–71. <https://doi.org/10.1002/dta.3140>.

Structure identification and analysis of the suspected chemical precursor of 2-fluorodeschloroketamine and its decomposition products, X. Luo, D. Zhang, Q. Luo, K. Huang, X. Liu, N. Yang, Z. Qin, C. Feng, J. Li, *Drug Testing and Analysis*, **2022**, 14, 1065–78. <https://doi.org/10.1002/dta.3229>.

Phenethyl-4-ANPP: A marginally active byproduct suggesting a switch in illicit fentanyl synthesis routes, M.M. Vandeputte, A.J. Krotulski, F. Hulpia, S. Van Calenbergh, C. P Stove, *Journal of Analytical Toxicology*, **2022**, 46, 350–57. <https://doi.org/10.1093/jat/bkab032>.

Identification of a novel norketamine precursor from seized powders: 2-(2-chlorophenyl)-2-nitrocyclohexanone, J.T. Yen, S.H. Tseng, D.Y. Huang, Y.S. Tsai, L.W. Lee, P.L. Chen, Y.L. Liu, S.C. Chyueh, *Forensic Science International*, **2022**, 333, 111241. <https://doi.org/10.1016/j.forsciint.2022.111241>.

A calibration friendly approach to identify drugs of abuse mixtures with a portable near-infrared analyzer, R.F. Kranenburg, H.J. Ramaker, S. Sap, A.C. van Asten, *Drug Testing and Analysis*, **2022**, 14, 1089–1101. <https://doi.org/10.1002/dta.3231>.

Comparing two seized drug workflows for the analysis of synthetic cannabinoids, cathinones, and opioids, E. Sisco, A. Burns, E. Schneider, C.R. Miller IV, L. Bobka., *Journal of Forensic Sciences*, **2022**, 67, 471–82. <https://doi.org/10.1111/1556-4029.14936>.

Selected Articles on the Analysis of Drugs of Abuse in Biological Specimens
(January - June 2022)

Determination of fentanyl, *alpha*-methylfentanyl, *beta*-hydroxyfentanyl and the metabolite norfentanyl in rat urine by LC–MS–MS, L. Li, X. Yu, L. Lyu, H. Duan, Y. Chen, J. Bian, Z. Xu, L. Liu, Y. Zhang, *Journal of Analytical Toxicology*, 2022, 46, 421–31. <https://doi.org/10.1093/jat/bkab021>.

ELISA screens for fentanyl in urine are susceptible to false-positives in high concentration methamphetamine samples, D.L. Abbott, J.F. Limoges, K.J. Virkler, Seth J. Tracy, G.G. Sarris, *Journal of Analytical Toxicology*, 2022, 46, 457–59. <https://doi.org/10.1093/jat/bkab033>.

Detecting fentanyl analogs in urine using precursor ion scan mode, M.M. Budelier, C.E. Franks, C.W. Farnsworth, S.M. Roper, *Journal of Analytical Toxicology*, 2022, 46, 157–62. <https://doi.org/10.1093/jat/bkab002>.

Analysis of the illicit opioid U-48800 and related compounds by LC–MS–MS and case series of fatalities involving U-48800, M.F. Fogarty, A.L.A. Mohr, D.M. Papsun, B.K. Logan, *Journal of Analytical Toxicology*, 2022, 46, 17–24. <https://doi.org/10.1093/jat/bkaa180>.

Fatal intoxication by the novel cathinone 4-fluoro-3-methyl- α -PVP, J.M. Hobbs, R.T. DeRienz, D.D. Baker, M.R. Shuttleworth, M. Pandey, *Journal of Analytical Toxicology*, 2022, 46, e101–4. <https://doi.org/10.1093/jat/bkac003>.

Application of a UPLC-MS/MS method for quantitative analysis of 29 synthetic cannabinoids and their metabolites, such as ADB-BUTINACA and MDMB-4en-PINACA in human hair in real cases, Z. Liying, S. Min, S. Baohua, C. Hang, W. Xin, D. Hongxiao, X. Ping, S. Yan, *Forensic Science International*, 2022, 331, 111139. <https://doi.org/10.1016/j.forsciint.2021.111139>.

Prevalence and concentrations of new designer stimulants, synthetic opioids, benzodiazepines, and hallucinogens in postmortem hair samples: A 13-year retrospective study, A. Niebel, L. Westendorf, F. Krumbiegel, S. Hartwig, M.K. Parr, M. Tsokos, *Drug Testing and Analysis*, 2022, 14, 110–21. <https://doi.org/10.1002/dta.3150>.

Ropinirole metabolite mimics a new psychoactive substance (4-HO-MET) in LC-MS/MS, M.H.Y. Tang, H.F. Tong, K.C. Wong, Y.K. Chong, *Forensic Science International*, 2022, 331, 111151. <https://doi.org/10.1016/j.forsciint.2021.111151>.

Determination of new psychoactive substances and other drugs in postmortem blood and urine by UHPLC-MS/MS: Method validation and analysis of forensic samples, E. Ferrari Júnior, E.D. Caldas, *Forensic Toxicology*, 2022, 40, 88–101. <https://doi.org/10.1007/s11419-021-00600-y>.

Development and validation of a rapid LC-MS/MS method for the detection of 182 novel psychoactive substances in whole blood, A. Giorgetti, R. Barone, G. Pelletti, M. Garagnani, J. Pascali, B. Haschimi, V. Auwärter, *Drug Testing and Analysis*, 2022, 14, 202–23. <https://doi.org/10.1002/dta.3170>.

Screening of new psychoactive substances in human plasma by magnetic solid phase extraction and LC-QTOF-MS, J. Hwang, S.An, H. Miri, J.H. Moon, G. Shim, H. Chung, *Forensic Science International*, 2022, 332, 111176. <https://doi.org/10.1016/j.forsciint.2022.111176>.

Simultaneous quantitation of seven phenethylamine-type drugs in forensic blood and urine samples by UHPLC–MS–MS, C.A. Yang, H.C. Liu, R.H. Liu, D.L. Lin, S.P. Wu, *Journal of Analytical Toxicology*, 2022, 46, 246–56. <https://doi.org/10.1093/jat/bkab014>.

Interference-free method for determination of benzodiazepines in urine based on restricted-access supramolecular solvents and LC–MS–MS, N. Caballero-Casero, L.D. Mihretu, S. Rubio, *Journal of Analytical Toxicology*, **2022**, 46, 285–94. <https://doi.org/10.1093/jat/bkab023>.

An enhanced LC–MS–MS technique for distinguishing $\Delta 8$ - and $\Delta 9$ -tetrahydrocannabinol isomers in blood and urine specimens, J.D. Reber, E.L. Karschner, J.Z. Seither, J.L. Knittel, K.V. Dozier, J.P. Walterscheid, *Journal of Analytical Toxicology*, **2022**, 46, 343–49. <https://doi.org/10.1093/jat/bkac007>.

Conversion of 7-carboxy-cannabidiol (7-COOH-CBD) to 11-nor-9-carboxy-tetrahydrocannabinol (THC-COOH) during sample preparation for GC–MS analysis, E.D. Hart, S. Vikingsson, J.M. Mitchell, R.E. Winecker, R. Flegel, E.D. Hayes, *Journal of Analytical Toxicology*, **2022**, 46, 573–76. <https://doi.org/10.1093/jat/bkab046>.

Analytical and medico-legal problems linked to the presence of *delta*-8-tetrahydrocannabinol (*delta*-8-THC): Results from urine drug testing in Sweden, A. Helander, M. Johansson, A. Andersson, T. Villén, *Drug Testing and Analysis*, **2022**, 14, 371–76. <https://doi.org/10.1002/dta.3190>.

Simultaneous quantification of 17 cannabinoids by LC–MS–MS in human plasma, C. Sempio, N. Almaraz-Quinones, M. Jackson, W. Zhao, GS. Wang, Y. Liu, M Leehey, et al, *Journal of Analytical Toxicology*, **2022**, 46, 383–92. <https://doi.org/10.1093/jat/bkab030>.

Buprenorphine prevalence in DUID cases in southwestern Virginia: Case studies and observations, J.J. Kuhlman, C. Harris, T. Wright, *Journal of Analytical Toxicology*, **2022**, 46, 89–98. <https://doi.org/10.1093/jat/bkaa176>.

Kavain interference with amphetamine immunoassay, H.T.P. Madhavaram, C Kyle, *Journal of Analytical Toxicology*, **2022**, 46, 211–15. <https://doi.org/10.1093/jat/bkaa178>.

Simultaneous quantitative analysis of 39 common toxicological drugs for increased efficiency in an ante- and postmortem laboratory, D.C. Mata, J. F. Davis, *Forensic Science International*, **2022**, 334, 111246. <https://doi.org/10.1016/j.forsciint.2022.111246>.

Novel extraction method using an ISOLUTE PLD+ protein and phospholipid removal column for liquid chromatography-tandem mass spectrometry analysis of 20 psychoactive drugs in postmortem whole blood samples, T. Ogawa, F. Kondo, M. Iwai, T. Matsuo, K. Kubo, H. Seno, *Forensic Science International*, **2022**, 331, 111130. <https://doi.org/10.1016/j.forsciint.2021.111130>.