

Eduardo Geraldo de Campos
Assistant Professor
Department of Forensic Science
College of Criminal Justice

Degrees Earned

B.S., Chemistry, Concentration: Forensic Science, University of Sao Paulo (Brazil), 2013

M.S., Chemistry, University of Sao Paulo (Brazil), 2016

PhD, Chemistry, University of Sao Paulo (Brazil), 2020

Professional Licensure and Certifications

N/A

Peer-Review Publications and Artistic Performances/Exhibitions

Articles

1. Identification of ADB-5'Br-BINACA in plant material and analytical characterization using GC-MS, LC-QTOF-MS, NMR and ATR-FTIR

Eduardo G. de Campos, David G. Farrar and Alex J. Krotulski

Journal of Pharmaceutical and Biomedical Analysis, 247, 116254, 2024, <https://doi.org/10.1016/j.jpba.2024.116254>.

2. Investigating luxS gene expression in lactobacilli along lab-scale cocoa fermentations

Almeida, O.G.G.; Pereira, M. G.; Bighetti-Trevisan, R. L.; Santos, E.S.; De Campos, E. G.; Felis, G.E.; Guimarães, L.H.S.; Polizeli, M.L.T.M; De Martinis, B. S.; De Martinis, E.C.P Food Microbiology, volume 119, 2024, 104429, <https://doi.org/10.1016/j.fm.2023.104429>

3. Development and validation of a sensitive LC–MS-MS method to quantify psilocin in authentic oral fluid samples

Marilia S. Cardoso, Kelly F. da Cunha, Izabelly G. Silva, Taís R. Fiorentin, Eduardo G. de Campos, Jose Luiz Costa

Journal of Analytical Toxicology, Volume 47, Issue 9, November 2023, Pages 835–841, <https://doi.org/10.1093/jat/bkad064>

4. The role of microorganisms in the biotransformation of psychoactive substances and its forensic relevance: a critical interdisciplinary review

Eduardo G. de Campos, Otavio G. G. de Almeida and Elaine C. P. De Martinis

Forensic Sciences Research, owad025, 2023, <https://doi.org/10.1093/fsr/owad025>

5. Cocaine Trafficking in Asphalt Material: An Unusual Report of Cocaine in Seized Drugs

Fabiana S. dos Santos, Fernanda Monedeiro, Jesus Antonio Velho, Sergio R. S. C. de Souza, Eduardo G. de Campos, Bruno S. De Martinis

Brazilian Journal of Analytical Chemistry, Volume 10, Issue 39, pp 80-87, 2023 doi: <https://doi.org/10.30744/brjac.2179-3425.AR-46-2022>

6. Development of analytical method for the determination of methylphenidate, the analog ethylphenidate and their metabolite ritalinic acid in oral fluid samples by micro-QuEChERS and liquid chromatography–tandem mass spectrometry

Kauê O. Chinaglia, Ana Carolina F. Arantes, Kelly F. da Cunha, Eduardo G. de Campos, Júlia M. M. Kahl, Leonardo C. Rodrigues, José Luiz Costa
Journal of Chromatography B, Volume 1205, 123330, 2022,
<https://doi.org/10.1016/j.jchromb.2022.123330>

7. Identification of synthetic cathinones in seized materials: a review of analytical strategies applied in Forensic Chemistry

Eduardo G. de Campos, Alex J. Krotulski, Bruno S. De Martinis, Jose Luiz Costa
WIREs Forensic Sciences, 4:e1455, 2022, <https://doi.org/10.1002/wfs2.1455>

8. Dispersive liquid–liquid microextraction of 11-nor- Δ^9 -tetrahydrocannabinol-carboxylic acid applied to urine testing

Leonardo C. Rodrigues, Julia M. M. Kahl, Kauê O. Chinaglia, Eduardo G. de Campos, Jose Luiz Costa
Bioanalysis, 14(2), 2022, <https://doi.org/10.4155/bio-2021-0237>

9. Cocaine esterase occurrence in global wastewater microbiomes and potential for biotransformation of novel psychoactive substances

Eduardo G. de Campos, Otávio G. G. de Almeida, Bruno S. De Martinis, Elaine C. P. De Martinis
Environmental Microbiology Reports, 14(6), 2022, <https://doi.org/10.1111/1758-2229.13020>

10. Analysis of Stimulants in Sweat and Urine Using Disposable Pipette Extraction and Gas Chromatography Coupled to Mass Spectrometry in the Context of Doping Control

Dayanne M. Bordin, David Bishop, Eduardo G. de Campos, Lucas Blanes, Philip Doble, Claude Roux, Bruno S. De Martinis
Journal of Analytical Toxicology, Volume 46, Issue 9, 2022, Pages 991–998,
<https://doi.org/10.1093/jat/bkab116>

11. Activated charcoal pellets as an innovative method for forensic analysis of ignitable liquid residues from fire debris by GC-MS

Laís H. P. B. Carmona, Eduardo G. de Campos, Vitor L. C. Bigão, Ana Luiza C. Pereira, Flavia D. Maia, Laíza S. Telles, Bruno S. De Martinis
Brazilian Journal of Analytical Chemistry (BrJAC), 9(34), 2022,
<http://dx.doi.org/10.30744/brjac.2179-3425.AR-62-2021>

12. Trends in scientific communication and continuing education in Forensic Sciences during the pandemic of COVID-19: The role of virtual conferences and experiences of the 2020 Online Congress of the Brazilian Society of Forensic Sciences

Eduardo G. de Campos, Daniel J. Dorta, Bruno S. De Martinis
Brazilian Journal of Analytical Chemistry (BrJAC), 9(34), 2022,
<http://dx.doi.org/10.30744/brjac.2179-3425.AR-57-2021>

13. Alternative matrices in Forensic Toxicology: a critical review

Eduardo G. de Campos, Bruno R. B. da Costa, Fabiana S. dos Santos, Fernanda Monedeiro, Marcela N. Alves, Wilson J. Santos Jr., Bruno S. De Martinis
Forensic Toxicology (Springer), 40, 2022, <https://doi.org/10.1007/s11419-021-00596-5>

14. Forensic analysis of illicit drugs and novel psychoactive substances in wastewater: a review of toxicological, chemical and microbiological aspects
Eduardo G. de Campos, Elaine C. P. De Martinis, Bruno S. De Martinis
Brazilian Journal of Analytical Chemistry (BrJAC), 9(34), 2022,
<http://dx.doi.org/10.30744/brjac.2179-3425.RV-19-2021>
15. Analysis of 2,4-Dinitrophenol in Postmortem Blood and Urine by Gas Chromatography-Mass Spectrometry: Method Development and Validation and Report of Three Fatalities in the United States.
Eduardo G. de Campos, Melissa Fogarty, Bruno S. De Martinis, Barry K. Logan
Journal of Forensic Sciences, 65, 2020, <https://doi.org/10.1111/1556-4029.14154>
16. A Gas Chromatography-Mass Spectrometry Method for Toxicological Analysis of MDA, MDEA and MDMA in Vitreous Humor Samples from Victims of Car Accidents.
Aline A. Ishikawa, Dayanne M. Bordin, Eduardo G. de Campos, Lucas Blanes, Philip Doble, Bruno S. De Martinis
Journal of Analytical Toxicology, 42(9), p. 661-666, 2018, <https://doi.org/10.1093/jat/bky044>
17. Understanding alterations on blood and biochemical parameters in athletes that use dietary supplements, steroids and illicit drugs.
Dayanne M. Bordin, Barbara B. Bettim, Gleici C. Perdoná, Eduardo G. de Campos, Bruno S. De Martinis
Toxicology (Amsterdam), 376, p. 75-82, 2017, <https://doi.org/10.1016/j.tox.2016.05.019>
18. Disposable pipette tips extraction: Fundamentals, applications and state of the art.
Dayanne C. M. Bordin, Marcela N. R. Alves, Eduardo G. de Campos, Bruno S. De Martinis
Journal of Separation Science, 39(6), 2016, <https://doi.org/10.1002/jssc.201500932>
19. Técnicas de preparo de amostras biológicas com interesse forense
Dayanne C. M. Bordin, Fernanda Monedeiro, Eduardo G. de Campos; Marcela N. R. Alves, Lais H. P. Bueno, Bruno S. De Martinis
Scientia Chromatographica, 7, p. 125-143, 2015, <http://dx.doi.org/10.4322/sc.2015.022>
20. Investigation of ketamine pharmacological modulation of aggressive behavior in adult zebrafish.
Eduardo G. de Campos, Bruno S. De Martinis
Neuroscience Communications, 1, p. e1025, 2015, <https://doi.org/10.14800/nc.1025>
21. Ketamine induces anxiolytic effects in adult zebrafish: A multivariate statistics approach.
Eduardo G. de Campos, Aline T. Bruni, Bruno S. De Martinis
Behavioural Brain Research, 292, p. 537-546, 2015, <https://doi.org/10.1016/j.bbr.2015.07.017>
22. A rapid assay for simultaneous determination of nicotine, cocaine, and metabolites in meconium using disposable pipette extraction and gas chromatography/mass spectrometry (GC/MS).
Dayanne C. M. Bordin, Marcela N. R. Alves, Eduardo G. de Campos, Oscar Cabrices, Bruno S. De Martinis
Journal of Analytical Toxicology, 38(1), 2014, <https://doi.org/10.1093/jat/bkt092>

Books

N/A

Chapters

1. Amphetamine-Type Stimulants

Eduardo G. de Campos, Nayna C. Gomes, Bruno S. De Martinis

In: Encyclopedia of Forensic Sciences, Third Edition 97–104 (Elsevier, 2023),

<https://doi.org/10.1016/B978-0-12-823677-2.00141-0>.

2. Sweat as an Alternative Matrix in Forensic Toxicology

Nayna C. Gomes, Eduardo G. de Campos, Bruno S. De Martinis

In: Encyclopedia of Forensic Sciences, Third Edition 97–104 (Elsevier, 2023),

<https://doi.org/10.1016/B978-0-12-823677-2.00218-X>.

3. Intoxicações Intencionais por Praguicidas

Rafael Lanaro, Marcos A. V. Messias, Dayanne M. Bordin, Eduardo G. de Campos

In: Daniel J. Dorta, Mauricio Yonamine, Bruno S. De Martinis; Jose Luiz Costa (Ed.). "Toxicologia Forense". 1st ed. São Paulo: Edgard Blucher, 2018.

Proceedings

1. De Campos, E. G.; Sigmann, S. Recommendation of a safety framework for undergraduate forensic chemistry/toxicology teaching laboratories based on the RAMP risk-based management system. XXIII Brazilian Congress of Toxicology in Rio de Janeiro, Brazil, May 15th – 18th, 2024
2. Lang, D.; De Campos, E. G. Development of a GC-MS/MS method for the analysis of delta-8-THC in commercial oils. 2024 American Chemical Society Spring Meeting in New Orleans, LA, March 17th – 21st, 2024.
3. Hubbard, K.; Bruni, A. T.; De Campos, E. G. Comparative in silico study of the toxicology of novel synthetic opioids using multivariate statistical methods. 2023 Southeast Regional Meeting of the American Chemical Society, Durham, NC, United States, October 25th – 28th, 2023
4. De Campos, E. G.; Farrar, D. G.; Krotulski, A. J. Identification of ADB-5'Br-BINACA in plant-material seized in the United States and full chemical characterization using GC-MS, LC-QTOF-MS, NMR, and ATR-FTIR. 60th TIAFT Meeting, Rome, Italy, August 27th – 31st, 2023
5. Dos Santos, F. S.; Monedeiro, F.; Velho, J. A.; De Souza, S. R. S. C. Cocaine trafficking in asphalt material: an unusual report of cocaine in seized drugs. 60th TIAFT Meeting, August 27th – 31st, 2023
6. Lang, D.; De Campos, E. G. The Chemical Characterization of Cannabidiol-Based Products Using Attenuated Total Reflectance/Fourier Transform Infrared (ATR/FTIR), Gas Chromatography/Mass Spectrometry (GC/MS) and Gas Chromatography/Tandem Mass Spectrometry (GC/MS/MS). 75th AAFS Meeting, February 13th – 18th, 2023
7. Rogers, M.; Dore, T.; De Campos, E. G. Investigation of the cross-reactivity of clonazepam, flualprazolam and flubromazolam with benzodiazepines lateral flow immunoassay tests. 2022 SOFT Meeting, Cleveland, OH, United States, October 31st – November 4th, 2022

8. De Campos, E. G.; Puckett, L. G. Perspectives in Undergraduate Forensic Science Education: The Development of Specialty Courses and Lessons Learned at Appalachian State University. 8th National Meeting of Forensic Chemistry and 5th Meeting of the Brazilian Society of Forensic Sciences, September 5 – 8, 2022
9. De Campos, E. G.; Fiorentin, T. R.; Martins, A. F.; Fabris, A.; Araujo, K. R. G.; Martins, A. F.; Huestis, M. A.; Da Costa, J. L.; Yonamine, M. Understanding NPS trends and challenges in Brazil: literature data mining and temporal comparison to NPS in Europe and the United States. 8th National Meeting of Forensic Chemistry and 5th Meeting of the Brazilian Society of Forensic Sciences, September 5 – 8, 2022
10. Rodrigues, L. C.; da Costa, J. L.; Chinaglia, K. O.; Kahl, J. M. M.; de Campos, E. G. Analysis of 11-nor- Δ^9 -tetrahydrocannabinol-carboxylic acid in urine using dispersive liquid-liquid microextraction and GC-MS/MS: Applications of green analytical toxicology in forensic and clinical casework. 2022 TIAFT Virtual Meeting, February 1 – 3, 2022
11. Martins, A. F.; Lanaro, R.; Aquino, E.; de Campos, E. G.; da Costa, J. L. K“Love Honey”: the emergence of non-approved sexual stimulant products containing sildenafil and tadalafil in Brazil. 2022 TIAFT Virtual Meeting, February 1 – 3, 2022
12. De Campos, E. G.; de Almeida, O. G. G.; De Martinis, B. S.; De Martinis, E. C. P. Investigation of cocaine esterase genes in global wastewater microbiomes and prediction of microbial hydrolysis of novel psychoactive substances: New frontiers of drug monitoring in wastewater. XVI TIAFT Latin-American Regional Meeting, November 23, 2021
13. De Campos, E. G.; De Martinis, E. C. P. In silico prediction of human and microbial biotransformations of eutylone: potential computational tools for preliminary studies on novel psychoactive substances. Simpósio Brasileiro de Análises Toxicológicas (SIBRAT), 2021
14. De Campos, E. G.; Krotulski, A. J.; De Martinis, B. S.; Logan, B. K. In Vitro Metabolism Studies of Novel Cathinones N-Ethyl-Hexylone, Tertylone, 4-Methyldiethcathinone and 3,4-Dichloroethcathinone using Human Liver Microsomes and High Resolution Mass Spectrometry. “XXI Brazilian Congress of Toxicology and XV TIAFT Latin-American Regional Meeting”, Águas de Lindóia, Brazil, October 28 – 31, 2019
15. De Campos, E. G.; Fogarty, M.; De Martinis, B. S.; Logan, B. K. Comprehensive Screening of Traditional and Novel Psychoactive Substances in Postmortem Dried Blood Spots Specimens by UHPLC-QTOF-MS. “2019 SOFT Annual Meeting”, San Antonio, United States, October 13 – 18, 2019.
16. De Campos, E. G.; Fogarty, M.; Logan, B. K. 2,4-Dinitrophenol (2,4-DNP) -An “Old New Drug”: A Gas Chromatography/ Mass Spectrometry (GC/MS) Method for Screening and Quantitation of 2,4-DNP in Postmortem Blood Specimens and Three Fatal Poisoning Cases Reports. “71st American Academy of Forensic Sciences Annual Meeting”, Baltimore, United States, February 18 – 23, 2019.

17. De Campos, E. G.; De Martinis, B. S. Developing a salt-supported dried blood spots method as novel approach for toxicological analysis of illicit drugs and metabolites using Gas Chromatography-Mass Spectrometry. "2018 Society of Forensic Toxicologists Annual Meeting", Minneapolis, United States, October 8 – 12, 2018
18. Menezes, N. H.; de Campos, E. G.; De Martinis, B. S. Investigação da possível interferência de componentes de suplementos alimentares em imunoensaios empregados no screening de cocaína. "3º Encontro da Sociedade Brasileira de Ciências Forenses e 6º Encontro Nacional de Química Forense", Ribeirão Preto, Brazil, 2018
19. De Campos, E. G.; De Martinis, B. S. Development and optimization of a novel ultrasound assisted silylation method of illicit drugs using GC-MS and chemometric techniques. 2018 TIAFT Annual Meeting, Ghent, Belgium, 2018
20. De Campos, E. G.; dos Santos, F. S.; De Martinis, B. S. Ultrasound can be applied in the derivatization of drugs of abuse: A pilot study with silylation of amphetamine, MDA and MDMA using GC/EI-MS and univariate experimental optimization. "Society of Forensic Toxicologists-The International Association of Forensic Toxicologists Joint Meeting". Boca Raton, FL, United States, January 6 – 11, 2018
21. Bordin, D. M.; de Campos, E. G.; Blanes, L.; De Martinis, B. S. A new approach for the analysis of stimulants in sweat using a disposable pipette extraction (DPX) and GC/MS. 54th Annual meeting of the International Association of Forensic Toxicologists (TIAFT), Brisbane, Australia, 2016
22. Bordin, D. M.; Bettim, B. B.; Perdoná, G. C.; de Campos, E. G.; De Martinis, B. S. Side effects in the consumption of anabolic androgenic steroids and dietary supplements. 9th Congress of Toxicology in Developing Countries / XIX Congresso Brasileiro de Toxicologia, 2015
23. De Campos, E. G.; Bruni, A. T.; De Martinis, B. S. Multivariate statistical methods in the investigation of the anxiolytic effects of ketamine. "9th Congress of Toxicology in Developing Countries/XIX Congresso Brasileiro de Toxicologia", Natal, RN, Brazil, November 7 – 8, 2015
24. Bordin, D. M.; de Campos, E. G.; De Martinis, B. S. A rapid assay for determination of MDMA, MDA, MDEA, methamphetamine and amphetamine in sweat using Disposable Pipette Extraction (DPX) and GC/MS. 52nd Annual Meeting of the International Association of Forensic Toxicologists, 2014
25. Bordin, D. M.; de Campos, E. G.; De Martinis, B. S. Application of validated method in meconium samples to investigate fetal exposure to drugs of abuse using disposable extraction and GC-MS. 51st Annual Meeting of the International Association of Forensic Toxicologists (TIAFT), 2013
26. Bordin, D. M.; de Campos, E. G.; De Martinis, B. S. Rapid extraction of drugs of abuse in meconium using disposable extraction and GC/MS. Congreso Internacional de Ciencias Forenses y Criminalística, 2012

Artistic Performances

N/A

Artistic Exhibitions

N/A

Research Monographs and Technical Reports

N/A

Funded External Grants

N/A

Peer-Review Presentations/Posters

1. De Campos, E. G.; Sigmann, S. Recommendation of a safety framework for undergraduate forensic chemistry/toxicology teaching laboratories based on the RAMP risk-based management system. XXIII Brazilian Congress of Toxicology in Rio de Janeiro, Brazil, May 15th – 18th, 2024 (Poster Presentation)
2. De Campos, E. G.; Farrar, D. G.; Krotulski, A. J. Identification of ADB-5'Br-BINACA in plant-material seized in the United States and full chemical characterization using GC-MS, LC-QTOF-MS, NMR, and ATR-FTIR. 60th TIAFT Meeting, Rome, Italy, August 27th – 31st, 2023 (Oral Presentation)
3. Rogers, M.; Dore, T.; De Campos, E. G. Investigation of the cross-reactivity of clonazepam, flualprazolam and flubromazolam with benzodiazepines lateral flow immunoassay tests. 2022 SOFT Meeting, Cleveland, OH, United States, October 31st – November 4th, 2022 (Poster Presentation)
4. De Campos, E. G.; Puckett, L. G. Perspectives in Undergraduate Forensic Science Education: The Development of Specialty Courses and Lessons Learned at Appalachian State University. 8th National Meeting of Forensic Chemistry and 5th Meeting of the Brazilian Society of Forensic Sciences, September 5 – 8, 2022 (Poster Presentation)
5. De Campos, E. G.; Fiorentin, T. R.; Martins, A. F.; Fabris, A.; Araujo, K. R. G.; Martins, A. F.; Huestis, M. A.; Da Costa, J. L.; Yonamine, M. Understanding NPS trends and challenges in Brazil: literature data mining and temporal comparison to NPS in Europe and the United States. 8th National Meeting of Forensic Chemistry and 5th Meeting of the Brazilian Society of Forensic Sciences, September 5 – 8, 2022 (Oral Presentation)
6. De Campos, E. G.; de Almeida, O. G. G.; De Martinis, B. S.; De Martinis, E. C. P. Investigation of cocaine esterase genes in global wastewater microbiomes and prediction of microbial hydrolysis of novel psychoactive substances: New frontiers of drug monitoring in wastewater. XVI TIAFT Latin-American Regional Meeting, November 23, 2021 (Prerecorded Oral Presentation)
7. De Campos, E. G.; Krotulski, A. J.; De Martinis, B. S.; Logan, B. K. In Vitro Metabolism Studies of Novel Cathinones N-Ethyl-Hexylone, Tertylone, 4-Methyldiethcathinone and 3,4-Dichloroethcathinone using Human Liver Microsomes and High Resolution Mass Spectrometry. "XXI Brazilian Congress of Toxicology and XV TIAFT Latin-American Regional Meeting", Águas de Lindóia, Brazil, October 28 – 31, 2019 (Oral and Poster Presentation)

8. De Campos, E. G.; Fogarty, M.; De Martinis, B. S.; Logan, B. K. Comprehensive Screening of Traditional and Novel Psychoactive Substances in Postmortem Dried Blood Spots Specimens by UHPLC-QTOF-MS. "2019 SOFT Annual Meeting", San Antonio, United States, October 13 – 18, 2019 (Poster Presentation)
9. De Campos, E. G.; Fogarty, M.; Logan, B. K. 2,4-Dinitrophenol (2,4-DNP) -An "Old New Drug": A Gas Chromatography/ Mass Spectrometry (GC/MS) Method for Screening and Quantitation of 2,4-DNP in Postmortem Blood Specimens and Three Fatal Poisoning Cases Reports. "71st American Academy of Forensic Sciences Annual Meeting", Baltimore, United States, February 18 – 23, 2019 (Poster Presentation)
10. De Campos, E. G.; De Martinis, B. S. Developing a salt-supported dried blood spots method as novel approach for toxicological analysis of illicit drugs and metabolites using Gas Chromatography-Mass Spectrometry. "2018 Society of Forensic Toxicologists Annual Meeting", Minneapolis, United States, October 8 – 12, 2018 (Poster Presentation)
11. De Campos, E. G.; dos Santos, F. S.; De Martinis, B. S. Ultrasound can be applied in the derivatization of drugs of abuse: A pilot study with silylation of amphetamine, MDA and MDMA using GC/EI-MS and univariate experimental optimization. "Society of Forensic Toxicologists-The International Association of Forensic Toxicologists Joint Meeting". Boca Raton, FL, United States, January 6 – 11, 2018 (Poster Presentation)
12. De Campos, E. G.; Bruni, A. T.; De Martinis, B. S. Multivariate statistical methods in the investigation of the anxiolytics effects of ketamine. "9th Congress of Toxicology in Developing Countries/XIX Congresso Brasileiro de Toxicologia", Natal, RN, Brazil, November 7 – 8, 2015 (Poster Presentation)

Work or Professional Experiences

01/2022 – 06/2024: Assistant Professor, Department of Chemistry and Fermentation Sciences, Appalachian State University, Boone, NC, United States

Honors and Awards

1. Awarded 2nd place in the "Prêmio Destaque Forense 2022" Award at the 8th National Meeting of Forensic Chemistry and 5th Meeting of the Brazilian Society of Forensic Sciences, September 2022.
2. Awarded 3rd place in the presentations of research areas at the VII Winter School of the Postgraduate Program in Biosciences and Biotechnology at the Faculty of Pharmaceutical Sciences of Ribeirão Preto, USP, 2021.

Other Competencies

N/A