

Prof. Karina Caballero-Gallardo. Ph.D

Associate Professor

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Date of Birth: April 14th, 1980
Passport: AT801867, Colombia
Nationality: Colombian

EDUCATION

2005 B.Sc. Food Engineer. University of Cartagena, Cartagena, Colombia.
2010 M.Sc. Environmental Sciences. University of Sucre, Sincelejo, Colombia.
2010 Certified Program in Third Level Education. Canal del Dique Alliance. Cartagena, Colombia.
2010 Internacional Certified Program in Acuiculture. Canal del Dique Alliance. Cartagena, Colombia.
2018-Present Visiting Scholar/Researcher. Universitat de Valencia. España.
2014-2015 Visiting Scholar/Researcher. Purdue University. USA.
2016 Visiting Researcher. UNESP. Botucatu, Brazil.
2016 Ph.D. Environmental Toxicology. University of Cartagena, Cartagena, Colombia.

EXPERIENCE

2015-2017 Head of postgraduate and continuing education. School of Pharmaceutical Chemistry. University of Cartagena. Cartagena, Colombia.
2016-2017 Member Teaching Committee. School of Pharmaceutical Chemistry. University of Cartagena. Cartagena, Colombia. Resolution No. 005, 2016.
2016-2017 Member Curricular Committee. School of Pharmaceutical Chemistry. University of Cartagena. Cartagena, Colombia. Resolution No. 005, 2016.
2018-Present Member environmental Committee, Colombia. Resolution No. 018, 2018.
2018-Present Member admissions Committee. University of Cartagena Resolution No. 018, 2018.
2016-2018 Member Research Committee. School of Pharmaceutical Chemistry. University of Cartagena. Cartagena, Colombia. Resolution No. 005, 2016.
2016-2017 Member Graduate Committee. School of Pharmaceutical Chemistry. University of Cartagena. Cartagena, Colombia. Resolution No. 005, 2016.
2018-Present Associate Professor. School of Pharmaceutical Chemistry. Cartagena, Colombia.
2015-2018 Assistant Professor. School of Pharmaceutical Chemistry. Cartagena, Colombia.
2012-2015 Auxiliar Professor. University of Cartagena. Cartagena, Colombia.
2008-2010 Professor/researcher. CREAD. University of Cartagena. Colombia.
2006-Present. Associate Investigator. Environmental and Computational Chemistry Group. University of Cartagena. Cartagena, Colombia..

Research experience: RNA Isolation from mice, insects, human blood, and cells. Determination of RNA concentration and purity. cDNA Synthesis. Gene expression analysis by Real-Time PCR in samples from mice, insects, human blood, and cells. Maintenance of cell lines. Cytotoxicity assays. Bioassays. Microarrays. Repellent and toxicity bioactivity assays with essential oils and insects. Fish processing for mercury analysis. Processing of human and environmental samples for mercury analysis. Determination of total mercury in several human and environmental matrices,

such as hair, fish, sediments, ashes, rice, plants, coal, glass, dragonfly. Handling of the Direct Mercury Analyzer DMA-80. Handling of the Lumex Mercury Analyzer RA-915+/M and PYRO-915

AWARDS

1. **Mobility-scholarship.** Fourth Call for funding for participation in scientific events for plant teachers and students assigned to research groups categorized by the Administrative Department of Science, Technology and Innovation - Colciencias in categories A1, A, B, and C and D and endorsed by the University of Cartagena. Resolution No. 01265-**2018**.
2. **Book award.** Seventh internal call for the publication of research books of the University of Cartagena, José Joaquín Gómez collection "Libro: perspectives of environmental health in lead contamination in children in northern Colombia". Resolution 00330-**2018**.
3. **Teaching mobility-scholarship.** Tenth call for international mobility, internship mobility, for teachers of plant attached to research groups visible in the Scienti platform of the Administrative Department of Science, Technology and Innovation-Colciencias and endorsed by the University of Cartagena. Resolution 02243-**2018**.
4. **First place for research in the mitigation and remediation category.** III International Seminar on Environmental Sciences. Barranquilla, Colombia June 28-29, **2017**.
5. **Book award.** Third internal call for the publication of research books of the University of Cartagena, Gabriel García Marquéz collection. Resolution 3252, **2015**.
6. **Teaching mobility-scholarship.** Fifth call for international mobility, internship mobility, for teachers of plant attached to research groups visible in the Scienti platform of the Administrative Department of Science, Technology and Innovation-Colciencias and endorsed by the University of Cartagena. Resolution 01153, **2016**.
7. **Best Poster Award.** 8th Brazilian Symposium on Essential Oils-International Symposium on Essential Oils. Chromaleont. Brazil. November, **2015**.
8. **Best Poster Award in Natural Products.** XIII Symposium on Science and Technology Cosmetics, y IX Congress of Pharmaceutical Sciences. National College of Pharmacists of Colombia. Cali, Colombia. August, **2014**.
9. **SOT Travel award.** San Antonio. TX. March, **2013**.
10. **SOT/AstraZeneca Travel Fellowship Awards .** San Antonio. TX. March, **2013**.
11. **Innovation Award of Phytopharmaceutical Products. National College of Pharmacists of Colombia.** Bogotá, Colombia. October, **2013**.
12. **COLCIENCIAS Scholarship.** National Ph.D. Programs. Bogotá, Colombia. Sixth Place nationwide. **2012**.
13. **Young Investigator Program. Sponsored by COLCIENCIAS.** National Institute of Science and Technology of Colombia. COLCIENCIAS. Bogotá. **2005**.

MEMBERSHIP OF PROFESSIONAL ORGANIZATIONS

2011-Present Member of the National Society of Engineers (COPNIA). 2011-Present Member of Society of Toxicology. USA. 2011-Present Member of Hispanic Organization of Toxicologists

PROFESSIONAL ACTIVITIES

Occasional Reviewer for the following journals: *Environment International, Science of the Total Environment, MethodsX, Aquaculture.*

MAJOR RESEARCH INTERESTS

Bioprospection of Natural Products. Food Pollutants. Molecular and Cell Biology. Environmental Education. Mechanisms of toxicity of pollutants. Distribution, behavior and fate of metals and organic compounds in the environment. Wildlife exposures, bioaccumulation and toxicology. Ecological risk assessment.

PUBLICATIONS: Citations, H index: 12. <https://scholar.google.com/citations?user=LuARztEAAAAI&hl=es>
H index: 10: <https://www.scopus.com/authid/detail.uri?authorId=36087148000>

Thesis

1. **Caballero-Gallardo, K.** (2016). Environmental health perspectives on coal pollution: a view from the shipping ports to direct contact with coal dust or their extracts. Doctoral thesis. University of Cartagena, Cartagena, Colombia.
2. **Caballero-Gallardo, K.** (2010). Bioactivity of essential oils from aromatic plants grown in Colombia and some of their individual constituents against *Tribolium castaneum* Herbst (Coleoptera: Tenebrionidae). Master's Degree Thesis, University of Sucre, Sincelejo, Colombia.
3. **Caballero-Gallardo, K.**, and Castro, K. (2005). Aflatoxins present in corn (*Zea mays*) samples from Cartagena, Turbaco and Arjona. Undergraduate thesis, University of Cartagena. Cartagena, Colombia.

Research Papers in Peer Reviewed Journals (a total of 30 papers). See list attached to the call. Below is the information for the year 2018:

1. **Caballero-Gallardo, K.**, Wirbisky-Hershberger, S.E., Olivero-Verbel, J., de la Rosa, J., Freeman, J.L. **2018**. Embryonic exposure to an aqueous coal dust extract results in gene expression alterations associated with the development and function of connective tissue and the hematological system, immunological and inflammatory disease, and cancer in zebrafish. *Metallomics*. 10(3): 463-473.
2. Rocha-Román, L., **Caballero-Gallardo K.**, Olivero-Verbel J. **2018**. Impacto de la minería del oro asociado con la contaminación por mercurio en suelo superficial de San Martín de Loba, sur de bolívar (Colombia). *Rev. Int. Contam. Ambie.* 34(1): 93-102.
3. Palacios-Torres Y, **Caballero-Gallardo K.**, Olivero-Verbel J. **2018**. Mercury pollution by gold mining in a global biodiversity hotspot, the Choco biogeographic region, Colombia. *Chemosphere*. 193: 421-430.

Manuscript submitted/accepted for publication.

1. Alcalá-Orozco, Maria., **Caballero Gallardo, Karina.**, Olivero-Verbel, Jesus. Repellent and fumigant actions of the essential oils from *Elettaria cardamomum*, *Salvia officinalis* and *Lippia origanoides* against *Tribolium castaneum* and *Ulomoides dermestoides*. Article submitted to the *Journal of Essential Oil Bearing Plants*. **2018**.
2. Carranza-Lopez, L., **Caballero Gallardo, K.**, Olivero-Verbel, J. Multicompartment mercury contamination in major gold mining districts at the Department of Bolivar, Colombia. Article submitted to the *Archives of Environmental Contamination and Toxicology*. **2018**.
3. Pajaro-Castro, N., **Caballero Gallardo, K.**, Olivero-Verbel, J. Toxicity and expression of oxidative stress genes in *Tribolium castaneum* induced by toluene, xylene, and thinner. Article accepted to publication in the *Journal of Toxicology and Environmental Health, Part A*. **2018**.

Book Chapters (A total of 8). See list attached to the call.

Books (A total of 4). See list attached to the call. Below is the information for the year 2018:

1. Baldiris, R., **Caballero-Gallardo, K.**, Olivero-Verbel, J. Parasites in fish: emerging danger. 2nd Edition. University Editorial. In writing. **2018**.
2. Alvarez-Ortega, N., **Caballero-Gallardo, K.**, Olivero-Verbel, J. Perspectives of environmental health in lead contamination in children in northern Colombia. University Editorial. In writing. **2018**.

Conference Presentations/Proceedings/Abstracts (More than 30 presentations in meetings worldwide). Below is the information for the year 2018:

- Caballero-Gallardo, K.**, Alcalá-Orozco, M., Barraza-Quiroz, D., Olivero-Verbel, J., Mercury Persistence in Sediments from Cartagena Bay, an Industrial Area in Northern Colombia. 19th International Conference on Heavy Metals in the Environment (ICHMET), Athens, Georgia. July 22-24, **2018**.
- Alcalá-Orozco, M., **Caballero-Gallardo, K.**, Olivero-Verbel, J., Mercury Pollution in Indigenous Communities Bordering the Cotuhe and Putumayo Rivers, Colombian Amazon. 19th International Conference on Heavy Metals in the Environment (ICHMET), Athens, Georgia. July 22-24, **2018**.
- Alvarez-Ortega, N., **Caballero-Gallardo, K.**, Olivero-Verbel, J., Lead Exposure and Toxicity in Children from the Colombian Caribbean. 19th International Conference on Heavy Metals in the Environment (ICHMET), Athens, Georgia. July 22-24, **2018**.
- Alvarez-Ortega, N., Olivero-Verbel, J., **Caballero-Gallardo, K.** Toxicological effects of lead in children from a fishing area at the Colombian Caribbean. Society of Toxicology Meeting. San Antonio, Texas, March 11-15, **2018**.
- Alcalá-Orozco, M., Olivero-Verbel, J., **Caballero-Gallardo, K.** Transgenerational Effects of Coal Dust on *Tribolium castaneum*, Herbst. Society of Toxicology Meeting. San Antonio, Texas, March 11-15, **2018**.
- Fuentes-Lopez, K., Olivero-Verbel, J., **Caballero-Gallardo, K.** Toxic Effects of Inhalable Coal Dust in BALB/c Mice. Society of Toxicology Meeting. San Antonio, Texas, March 11-15, **2018**.
- Tirado-Ballestas, I., Olivero-Verbel, J., **Caballero-Gallardo, K.** Effects of Coal Dust on *Eisenia fetida*, Savigny 1826. Society of Toxicology Meeting. San Antonio, Texas, March 11-15, **2018**.

Dictated courses (A total of 3)

Assistant in courses / seminars / conferences. (A total of 10). Below is the information for the year 2018:

Seminar "International seminar on marine pollution". Fulbright US Specialist. Cartagena. **2018**.

H. Educational Handouts (A total of 5)

STUDENTS: Currently, 3 Ph.D. students and 1 M.Sc. --Three M.Sc.s and 5 B.Sc.s. Graduated.

THESIS SUPERVISOR

Ph.D. (A total of 3). Below is the information for the year 2018:

Selenium modulatory role against the toxicodynamic effects of mercury in indigenous communities of Puerto Nariño, Amazonas (Colombia). *Maria Alcalá Orozco*. Approval date: May, **2018**. Present.

M.Sc. (A total of 4). Below is the information for the year 2018:

Determination of mercury levels in sediments of the Bay of Cartagena, Colombia. *Diana Barraza Quiroz*. Master's Program in Environmental Sciences. University of Cartagena **2018**. Present.

Undergraduate (A total of 5). Below is the information for the year 2018:

Repellent action, fumigant and inhibitor of the oviposition of two essential oils against *Ulomoides dermestoides*. *Dalilia Rodríguez Niño*. Pharmaceutical Chemistry. University of Cartagena. **2018**.

THESIS EVALUATED

Ph.D. Sources, distribution and evaluation of environmental risks of polycyclic aromatic hydrocarbons in the colombian caribbean as a marine pollution analysis tool. *Gisela Mayo Mancebo*. Ph.D. Program in Doctorado en Sea Sciences. Cartagena. June, 2017.

M.Sc. (A total of 12). Below is the information for the year 2018:

1. Bacterias aisladas de suelos arroceros contaminados con cadmio. Nataly Ayubb Torres. Programa de Maestría en Ciencias Ambientales. Sue Caribe-Universidad de Sucre. Junio, 2018.
2. Bacterias endofitas aisladas de cultivos de arroz con capacidad de tolerar diferentes concentraciones de cadmio. Armando Rafael Cerra Guzman. Programa de Maestría en Ciencias Ambientales. Sue Caribe-Universidad de Sucre. Junio, 2018.

Undergraduate (A total of 12). Below is the information for the year 2018:

Prevalencia y daño oxidativo eritrocitario de la deficiencia de glucosa 6-fosfato deshidrogenasa en estudiantes de los campus san pablo y Zaragocilla, Universidad de Cartagena. *Liliana Margarita Montalvo Alvarez y Jaison Enrique Torres Pacheco*. Programa de Biología. Agosto de 2018.

Evaluación del efecto citotóxico y antileishmanial del extracto total y fracciones de *Maclura tinctoria* Linn., *Cassia fistula* Linn., y *Malachra alceifolia* Jacq frente a *Leishmania panamensis*. *Luis Moneris y Liseth Revollo*. Química Farmacéutica. Agosto de 2018.

Evaluación in vitro del efecto antibacteriano de los extractos etanólicos de *Maclura tinctoria* Linn., *Cassia fistula* Linn., y *Malachra alceifolia* Jacq, y su contribución a la formulación de un fitoterapéutico para el tratamiento del acné. *Johan Perez y Luis Salazar*. Julio de 2018.

Promotion of good hygiene practices for food handlers-sellers of public roads in the sector progress Zaragocilla neighborhood. *Jose Vanegas Leon and Alicia Henriquez Diaz*. Pharmaceutical Chemistry program. March, 2018.

TEACHING EXPERIENCE: Currently I am teaching Biochemistry, Research Methodology, and Toxicological Bioassays for undergraduates, Research Seminars and bioassays in postgraduate programs (MSc and PhD), as well as supervisor of doctoral theses in the B.Sc, M.Sc, and Ph.D Programs at the University of Cartagena.

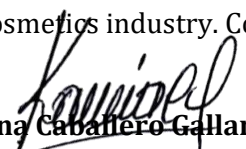
RESEARCH PROJECTS/GRANTS AWARDED (A total of 17). Below are listed projects in development:

Principal research. University of Cartagena. 2018-Present. Interaction between the mercury and the selenio in indigenous communities of Puerto Nariño, Amazonas (Colombia). Contrat No. 114-2018.

Principal research. University of Cartagena. 2018-Present. Transgenerational effects of carbon dust on *Tribolium castaneum*, Herbst. Contrat No. 119-2018.

Principal research. COLCIENCIAS - University of Cartagena. 2017-2019. Chemical and toxicological profile of the sediments of Cartagena Bay. Contrat No. FP448442-197/2017. Present.

Co-research. Colciencias-Industrial University of Santander. 2018-2022. Development of cosmeceuticals made from natural products from the Colombian Caribbean for use in the cosmetics industry. Contract FP 44842-212-2018. Present.


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