

GIOVANNY GARAVITO CARDENAS



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Academic:

- Postdoctoral position, Infection and Immunity Laboratory INSERM / UPMC UMR-S 945, Faculty of Medicine Pitié-Salpêtrière; Université Pierre et Marie Curie Paris VI,
Pharmacological experimental models of liver stages of malaria

- PhD, Université Toulouse III Paul Sabatier, UMR 152 PHARMA-DEV

Spécialité: Innovation Pharmacologique.

Titre du mémoire: *Etude pharmacologique expérimentale de l'activité antipaludique d'un composé de synthèse.*

Advisor: Dr. Eric Deharo. Co-advisor : Pr. Alexis Valentin

Mention *Tres Honorable*

- M.Sc. in Pharmacology, Departamento de Farmacia, Universidad Nacional de Colombia, 2003.

Thème: Experimental pharmacology, Malaria Research.

Titre du mémoire: *Standardization of two antimalarial activity models as tools for the pharmacological evaluation of vegetal extracts and pure substances*

Encadrant : Dra. Lucia Arteaga de Garcia.

Meritorious Mention

- Certified Training in Biological Products, Instituto de Salud Carlos III, Centro Nacional de Farmacobiología Madrid, España,

November-December 1996, supported by TDR/OMS

Thème: Vaccines, Synthetic malaria vaccines

Encadrant: Dra. Ana Padilla Marroquin.

- B.Sc. Pharmacy, Universidad Nacional de Colombia, Facultad de Ciencias, Departamento de Farmacia, Bogotá D.C. 1995.

Thème: Malaria Research, Synthetic Malaria Vaccines.

Titre du mémoire: Evaluation of the feasibility of a preservation system to be used in the formulation of the antimalarial vaccine SPf-66.

Encadrant: Dr. Miguel Feoli Bonilla.

Others

- *Universidad Nacional de Colombia, Departamento de Farmacia, Bogotá D.C., January 2004, Medicinal Chemistry Course.*

- *Universidad Mayor de San Andrés, Facultad de Ciencias Farmacéuticas y Bioquímicas, Instituto de Investigaciones Fármaco Bioquímicas*, La Paz, Bolivia, May - June 2002, Research training in evaluation of antimalarial activity of substances or extracts from vegetal origin in two pharmacological models.
- *Asociación Colombiana de Farmacología y Universidad del Valle*, August 2001, VII Colombian Congress of Pharmacology and Therapeutics and I International Symposia: "The Biodiversity as source of new drugs".
- *Centro Internacional de Entrenamiento e Investigaciones Médicas CIDEIM, OMS/PNUD/World Bank/TDR and COLCIENCIAS (Instituto Colombiano para el Desarrollo de la Ciencia y la Tecnología "Francisco José de Caldas")*. Cali, Colombia, Julio de 1998, Workshop of clinical assays for Latin-American, evaluation of drugs and vaccines for tropical diseases.
- World Health Organization WHO, Tropical Disease Research Program TDR, Geneva, Switzerland, October 1996, Structuration of the project "The development of guidelines for the licensing of biological products in Colombia including synthetic vaccines (peptides)".

RESEARCH SKILLS:

- Experimental pharmacological malaria research.
- Ethno pharmacology.
- Natural products.
- Pharmacology of anti-parasitic therapies used in traditional and folk medicine.
- Biological diversity and chemical approaches for disease intervention.
- Sanitary regulations and their impact on the safety and effectiveness of natural products.

LANGUAGES:

- Spanish as maternal language
- English: Centro Colombo-Americano, Bogotá D. C. Course finished (Certificate of Achievement, equivalent to 600 class hours), TOEFL 210 (equivalent to 540 – 557 Computer-based Test score), 1997.
- French: Universidad Nacional de Colombia, Bogotá D. C., Idioms Department, Levels I, II and III.

PROFESSIONAL EXPERIENCE:

Professor of Pharmacology, 2000-present, *Universidad Nacional de Colombia, Facultad de Ciencias, Departamento de Farmacia.*

-Teacher of pharmacology and research in antimalarial substances from vegetal origin.

Vice President: 2013-2014, *Asociación Colombiana de Farmacología.*

Chairman: 2013, Revising Committee of Medicinal Natural Products, Specialized Chamber, *Instituto Nacional de Vigilancia de Medicamentos y Alimentos INVIMA.*

Member of the committee: 2010-2011, Revising Committee of Medicinal Natural Products, Specialized Chamber, *Instituto Nacional de Vigilancia de Medicamentos y Alimentos INVIMA.*

Counselor, March 1999 – December 1999, *Instituto Nacional de Vigilancia de Medicamentos y Alimentos INVIMA, División Laboratorio de Medicamentos y Productos Biológicos.*

- Biological quality control of drugs and regulatory affairs.

Temporary counselor, September 1996 - January 1999 Pan-American Health Organization PAHO / World Health Organization WHO / Tropical Disease Research Program TDR, Project “The development of guidelines for biological products licensing in Colombia including synthetic vaccines (peptides)”, Agree between: TDR/WHO, Instituto Nacional de Vigilancia de Medicamentos y Alimentos INVIMA, e Instituto de Inmunología del Hospital San Juan de Dios IDI H.S.J.D.
Researcher, September 1994 – January 1996, *Instituto de Inmunología H.S.J.D.* (today *Fundación Instituto de Inmunología de Colombia*), Director Dr. Manuel Elkin Patarroyo.

PUBLICATIONS:

- Arias MH, Quiliano M, Bourgeade-Delmas S, Fabing I, Chantal I, Berthier D, Minet C, Eparvier V, Sorres J, Stien D, Galiano S, Aldana I, Valentin A, Garavito G, Deharo E. 2020. Alsinol, an arylamino alcohol derivative active against Plasmodium, Babesia, Trypanosoma, and Leishmania. Past and new outcomes. Parasitology Research. Accepted.
- Rodríguez ZJ, Rodríguez YV, García JO, Arias MH, Deharo E, Garavito G. 2020. Comparison of the antimalarial activity of a Colombian traditional Uitoto remedy with laboratory preparations. Journal of Vector Borne Diseases. Accepted.
- Quiliano M, Pabon A, Moles E, Bonilla-Ramirez L, Fabing I, Fong KY, Nieto-Aco D, Wright DW, Pizarro JC, Vettorazzi A, Lopez A, Deharo E, Fernandez-Busquets X, Garavito G, Aldana I, Galiano S. 2018. Structure-activity relationship of new antimalarial 1-aryl-3-substituted propanol derivatives: Synthesis, preliminary toxicity profiling, parasite life cycle stage studies, target exploration, and targeted delivery. European Journal of Medicinal Chemistry 152:489-514.
- Rodríguez YV, Arias MH, García JO, Deharo E, Garavito G. 2018. Pharmacological activity of Curarea toxicifera in combination with classical antimalarial treatments. J Ethnopharmacol. 222:288–294. doi: 10.1016/j.jep.2018.04.008.
- Arias MH, Deharo E, Valentin A, Garavito G. 2017. Adaptation and optimization of a fluorescence-based assay for in vivo antimalarial drug screening. Parasitol Res. 116(7):1955-1962. doi: 10.1007/s00436-017-5477-z.
- Arias MH, Rodríguez YV, Garavito G. 2016. Adaptación y optimización de un método de lectura por fluorimetría en el modelo farmacológico in vitro de cultivo de Plasmodium falciparum. Rev. colomb. cienc. quim. farm., Volumen 45(1), p. 127-146. DOI: <https://doi.org/10.15446/rcciquifa.v45n1.58024>
- Quiliano M, Mendoza A, Fong KY, Pabón A, Goldfarb NE, Garavito G. 2016. Exploring the scope of new arylamino alcohol derivatives: Synthesis, antimalarial evaluation, toxicological studies, and target exploration. Int J Parasitol Drugs Drug Resist. doi: 10.1016/j.ijpddr.2016.09.004.
- Fernández D, Segura C, Arboleda M, Garavito G, Blair S, Pabón A. 2014. In vitro Susceptibility of Plasmodium Vivax to antimalarials in Colombia. Antimicrob. Agents Chemother. doi:10.1128/AAC.03191-14.
- Rojas MA, Garavito G., Rincón J. 2014. In vitro antiplasmodial activity of Piper holtonii (cordoncillo). Revista Cubana de Plantas Medicinales. vol.19 (1).

- Braga de Oliveira A, de Paula RC, Dolabela MF, Rocha F, Gomes F, Garavito G, 2014. Aspidosperma species (Apocynaceae) as sources of antimalarials: from the *in vitro* antiplasmodial activity of extracts to pre-clinical toxicological studies for the development of efficient and safe antimalarial phytomedicines. *Malaria Journal* **13(1)**:P18. DOI: <https://doi.org/10.1186/1475-2875-13-S1-P18>
- Hernández J, Luengas P, Otero V, Garavito G. 2014. "Actividad antiplasmódica y hemolítica de extractos etanólicos y fracciones obtenidas de *Cecropia membranacea* Trécul. y *Cecropia metensis* Cuatrec. (sin. *C. peltata* var. *candida* Velásquez)". *Revista Cubana de Medicina Tropical*. Vol 66(1).
- Solano M, Garavito G. 2013. *Condición de venta de analgésicos antiinflamatorios no esteroides, legalmente autorizados para su comercialización en Colombia. Estrategias de uso racional*. *Revista Colombiana de Ciencias Químico Farmacéuticas*. Vol 42 (2), 145-168,
- Garavito G, Bertani S, Quiliano M, Valentin A, Aldana I, Deharo E. 2012. The *in vivo* antimalarial activity of methylene blue combined with pyrimethamine, chloroquine and quinine. *Mem Inst Oswaldo Cruz*. 107(6):820-823.
- Mendoza A, Pérez-Silanes S, Quiliano M, Pabón A, Galiano S, González G, Garavito G, et al. 2011. Aryl piperazine and pyrrolidine as antimalarial agents. Synthesis and investigation of structure–activity relationships. *Experimental Parasitology*. **128** p.97 – 103.
- Guevara H, Luengas P, Garavito G. 2010. *Revisión documental de los productos naturales legalmente autorizados para su mercadeo en Colombia*. *Colombia Médica*. **41(2)** p.129 – 140.
- Garavito G, Bertani S, Deharo E. 2008. Complementary findings on the antimalarial activity and toxicity of methylene blue. *VITAE*. **15(1)**.
- González MC, Losada M, Garavito G. 2008. *Evaluación de la opinión de estudiantes de farmacia sobre la implementación de alternativas basadas en computador para el proceso enseñanza–aprendizaje de la Farmacología Experimental*. *Revista de la Facultad de Medicina*. **56(1)**.
- Garavito G, Bertani S, Rincon J, Maurel S, Monje MC, Landau I, Valentin A, Deharo E. 2007. Blood schizontocidal activity of methylene blue in combination with antimalarials against *Plasmodium falciparum*. *Parasite*. **14(2)**: 135-40.
- Garavito G, Monje MC, Maurel S, Valentin A, Nepveu F, Deharo E. 2007. A non-radiolabeled Heme-GSH interaction test for the screening of antimalarial compounds. *Experimental parasitology*. **116(3)**: 311-13.
- Bertani S, Houël E, Stien D, Chevotot L, Jullian V, Garavito G, Bourdy G, Deharo E. 2006. Simalikalactone D is responsible for the antimalarial properties of an amazonian traditional remedy made with *Quassia amara* L. (simaroubaceae). *Journal of Ethnopharmacology*. **108**: 155-57.
- Garavito G, Rincón J, Arteaga L, Hata Y, Bourdy G, Jiménez A, Pinzon R, Deharo E. 2006. Antimalarial activity of some Colombian medicinal plants. *Journal of Ethnopharmacology*. **107**: 460-62.

- Garavito G, Ruiz G, Acebey L, Arteaga L, Pinzón R y Jiménez A. 2004. Actividad leishmanicida y tripanocida de algunas plantas reportadas como medicinales en Colombia. *BIOFARBO, Organo Oficial del Colegio de Bioquímica y Farmacia de Bolivia.* , v.XII: p.27 – 30.
- Garavito G., Arteaga L. y Acebey L., La biocristalización del heme como una potencial diana farmacológica en el desarrollo de fármacos para el tratamiento de la malaria, *Rev. Col. Cien Quím. Farm.*, 31: 85, (2002).

PRESENTATIONS COURSES AND CONFERENCES:

- XXII Latin American Congress of Pharmacology. September 2019. Ethnopharmacology and social responsibility.
- Colombo-France Colloquium on Research, Innovation and Higher Education - COLIFRI. June 2019. Moderator Working Group 3: Infectious Diseases.
- Colombo-French Researchers' Meeting CAPF. June 2018. Pharmacological models of infectious pathology.
- Maloka. *Ciclo Salud al rojo vivo, Conversatorio la industria farmacéutica. "Seguridad y eficacia de fitoterapeuticos"* Keynote lecture, Bogotá, May 2014.
- *Asociación Colombiana de Farmacología and Universidad ICESI. XIII Congreso Nacional de Farmacología y Terapéutica. "Seguridad y eficacia de fitoterapeuticos"* Keynote lecture, Cali, August 2011.
- *Asociación Colombiana de Farmacología. XII Congreso Nacional de Farmacología y Terapéutica. "Seguridad de Productos Naturales FITOS"* Keynote lecture, Bogotá, August 2009.
- *Asociación Colombiana de Farmacología and Universidad de Antioquia. IX Congreso Nacional de Farmacología y Terapéutica. "optimización de dos modelos de actividad antimalárica como herramientas para la evaluación farmacológica de sustancias o extractos de origen vegetal."* Presentation of research work, Medellín, October 2003.
- *Universidad Nacional de Colombia, Departamento de Farmacia.* Workshop "Basic elements of GLP for quality control laboratories. August 2000. Conferencist.
- *Universidad Nacional de Colombia, Departamento de Farmacia.* Workshop "Basic aspects for the licensing of pharmaceutical products, August 2000. Conferencist.
- Pan American Health Organization PAHO, Workshop evaluation of Vaccines and Immunization Program in Colombia, December 1998. Presentation: Adverse events after immunization.

PROFESSIONAL MEMBERSHIPS:

- Vice-President (2013-2014) and current member of the Board of Directors of the Colombian Association of Pharmacology.

PRIZES AND MENTIONS

- **Latin American Prize for Basic Pharmacology** (third place) at the XXII Latin American Congress of Pharmacology. Cali. 26 to 29 September 2019.
- **Pharmacology National Award Enrique Núñez Olarte.** *Asociación Colombiana de Farmacología. XVI Congreso Nacional de Farmacología y Terapéutica. Bucaramanga, August 2017.*
- **Fellow, Swedish International Development Cooperation Agency (Sida)** *The Swedish University of Agricultural Sciences. Sida's International Training Programme "Genetic Resources and Intellectual Property Rights" Uppsala Sweden and Johannesburg, South Africa, 2013 – 2014.*
- **Pharmacology National Award Enrique Núñez Olarte.** *Asociación Colombiana de Farmacología. XII Congreso Nacional de Farmacología y Terapéutica. Bogotá, August 2009.*
- **Visiting professor** at *Universidade Federal de Minas Gerais and Universidade Federal de Juiz de Fora.*
- **Fellow, ALBAN program (High level scholarships of the European Union for Latin America)** for a PhD thesis, 2004.
- **Pharmacology National Award Enrique Núñez Olarte and Rudolff Bucheim.** *Asociación Colombiana de Farmacología and Universidad de Antioquia. IX Congreso Nacional de Farmacología y Terapéutica. Medellín, October 2003.*

RESEARCH NETWORKS

- **LAVI, Laboratoire Ando - Amazonien de chimie du Vivant.** Participants: Research and development laboratories of *Universidad Peruana Cayetano Heredia, Laboratoire de Pharmacochimie des Substances Naturelles et Pharmacophores Redox, Université de Toulouse III* and *Grupo de Investigación Farmacología de la medicina tradicional y popular FaMeTra, Universidad Nacional de Colombia.*
- **Laboratoire de Pharmacochimie et Pharmacologie pour le Développement (PHARMA-DEV)** « unité mixte de recherche » (UMR 152), associant l' *Université Paul Sabatier (Toulouse III)* et l' *Institut de Recherche pour le Développement (IRD).*
- **RITAM Network** (Research Initiative for Tradicional Antimalarial Methods)

THESIS SUPERVISOR

- Undergraduate: 8 students.
- Master of Science: 8 students. (3 ongoing at the present)
- Doctor of Science (PhD): 3 students. (2 ongoing at the present)

RESEARCH GROUPS

- *Farmacología de la medicina tradicional y popular FaMeTra.* Researcher leader, category B (COLCIENCIAS 2014). <http://ciencias.bogota.unal.edu.co/gruposdeinvestigacion/fametra/>
- *Principios Bioactivos en Plantas Medicinales.* Category A1 (COLCIENCIAS 2014).

INTERNATIONAL CATHEDRA

- *Ethnopharmacology: traditional knowledge to scientific and scientific to society* <http://www.unal.edu.co/diracad/einternacional/2015-3/Etnofarmacologia-docentes.html>

- "Symposium on Research on Tropical Diseases and Biodiversity; Opportunities and Prospects in the Orinoquía Region of Colombia". Villavicencio, Colombia. 2016.
- "Les maladies infectieuses : Enjeux du XXI siècle " Year France Colombia 2017.

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