# PhD Freddy Alexander Bernal

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## Curriculum vitae

#### Main Research Areas

- Computer-Aided Drug Discovery
- Organic Synthesis of Drug-like Antimicrobial Compounds

#### Professional Career

Since 09.2020 Chemist for Drug Discovery, Transfer Group Anti-infectives, Leibniz Institute for Natural Product

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|---|---|
| | Research and Infection Biology – Hans Knöll Institute (HKI), Jena, Germany. *Topic*: Computer-aided discovery and optimization of novel antimicrobials. |
| 08.2015-10.2019 | Doctorate (Doctor of Natural Sciences – Pharmacy), Westfälische Wilhelms – Universität Münster, Münster, Germany. *Dissertation title:* Qualitative and quantitative structure-activity relationships on 2-phenyl-2,3-dihydrobenzofurans as Leishmanicidal agents. *Research advisor:* Prof. Dr. Thomas J. Schmidt |
| 02.2012-05.2015 | Research Assistant. Bioorganic Chemistry, Military University Nueva Granada, Cajicá, Colombia. |
| 07.2011-05.2015 | Lecturer, General Chemistry. Department of Chemistry, Military University Nueva Granada, Bogotá, Colombia. |
| 08.2011-12.2013 | Lecturer, Instrumental Analysis and Spectroscopy. Department of Educational Chemistry, Distrital University Francisco Jose de Caldas, Bogotá, Colombia. |
| 02.2010-12.2010 | Lecturer, Organic Chemistry and Analytical Chemistry. Technological Corporation of Bogota, Bogotá, Colombia. |
| 08.2007-10.2009 | Master in Sciences – Chemistry, National University of Colombia, Bogotá, Colombia. *Thesis title:* Isolation of secondary metabolites from the leaves of *Iryanthera ulei* Warb. (Myristicaceae), evaluation of their antimicrobial activity and synthesis of one 8-*O*-4′-neolignan. *Research advisor:* Prof. Dr. Luis E. Cuca. |
| 02.2002-02.2007 | Bachelor in Chemistry, National University of Colombia, Bogotá, Colombia. |

**Publications**

Keiff F, Jacques dit Lapierrev TJW, Bernal F, Kloss F (2023) Design and synthesis of benzofuran- and naphthalene-fused thiazinones as antimycobacterial agents. *Arch Pharm*

*(Weinheim)* 356(11), e2300356.

Details

Bernal FA, Coy-Barrera E (2022) Composition and antifungal activity of the alkaloidal fraction of *Lupinus mirabilis* leaves: A biochemometrics-based exploration. *Molecules* 27(9), 2832.

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PAPER

Bernal FA, Hammann P, Kloss F (2022) Natural products in antibiotic development: is the success story over? *Curr Opin Biotechnol* 78, 102783. (Review)

Details

Schieferdecker S, Bernal FA, Wojtas KP, Keiff F, Li Y, Dahse HM, Kloss F (2022) Development of predictive classification models for whole cell antimycobacterial activity of benzothiazinones. *J*

*Med Chem* 65(9), 6748-6763.

Details

Bernal FA, Gerhards M, Kaiser M, Wünsch B, Schmidt TJ (2020) (±)-trans-2-phenyl-2,3-dihydrobenzofurans as leishmanicidal agents: Synthesis, *in vitro* evaluation and SAR analysis. *Eur J Med Chem* 205, 112493.

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Bernal FA, Kaiser M, Wünsch B, Schmidt TJ (2020) Structure-activity relationships of cinnamate ester analogues as potent antiprotozoal agents. *ChemMedChem* 15(1), 68-78.

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Martin B, Schepmann D, Bernal FA, Schmidt TJ, Che T, Loser K, Wünsch B (2020) Enantiomerically pure quinoline-based κ-opioid receptor agonists: Chemoenzymatic synthesis and pharmacological evaluation. *ChemMedChem* 15(15), 1408-1420.

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Sánchez-Suárez J, Bernal FA, Coy-Barrera E (2020) Colombian contributions fighting leishmaniasis: A systematic review on antileishmanials combined with chemoinformatics analysis. *Molecules* 25(23), 5704.

Details

Bernal FA, Schmidt TJ (2019) A Comprehensive QSAR Study on Antileishmanial and Antitrypanosomal Cinnamate Ester Analogues. *Molecules* 24(23),

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Guerrero-Perilla C, Bernal FA, Coy-Barrera E (2018) Insights into the interaction and binding mode of a set of antifungal azoles as inhibitors of potential fungal enzyme-based targets. *Mol Divers* 22(4), 929-942.

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Page 1 of 3

- **1**
- 2
- 3
- Load more
- Last

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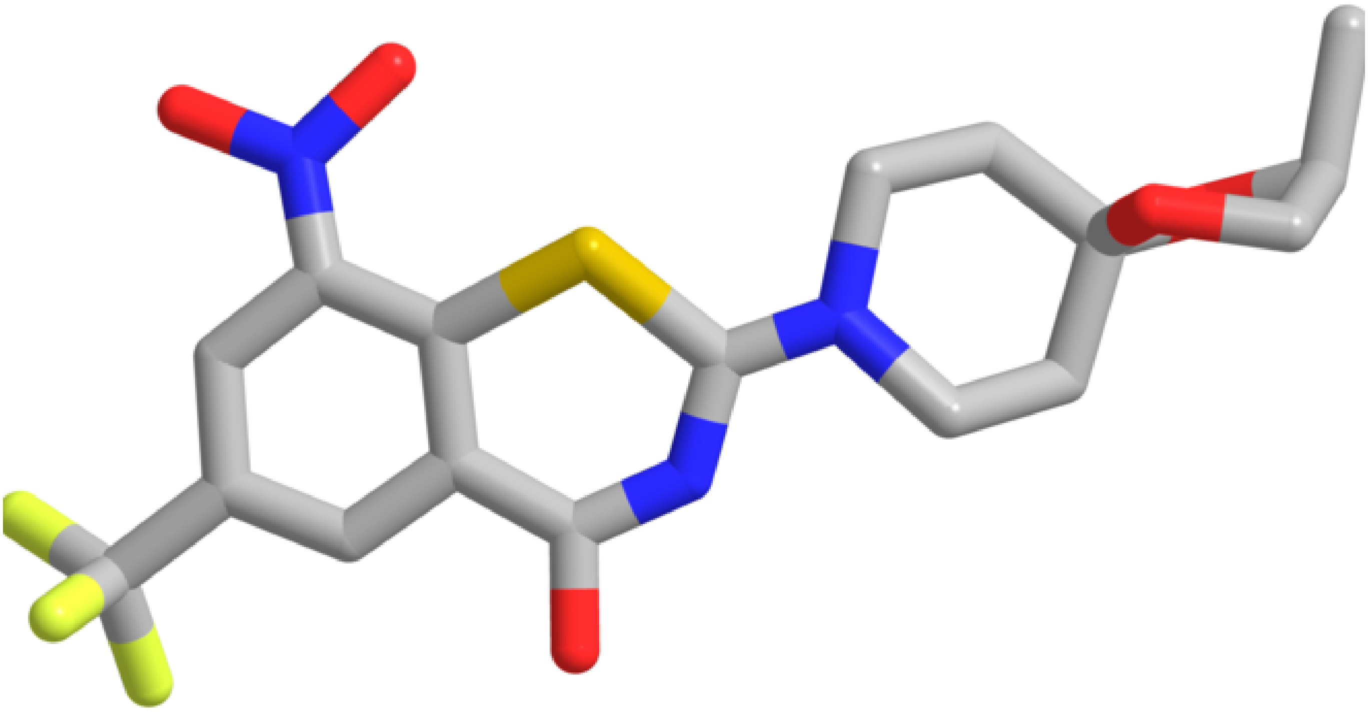
**News**



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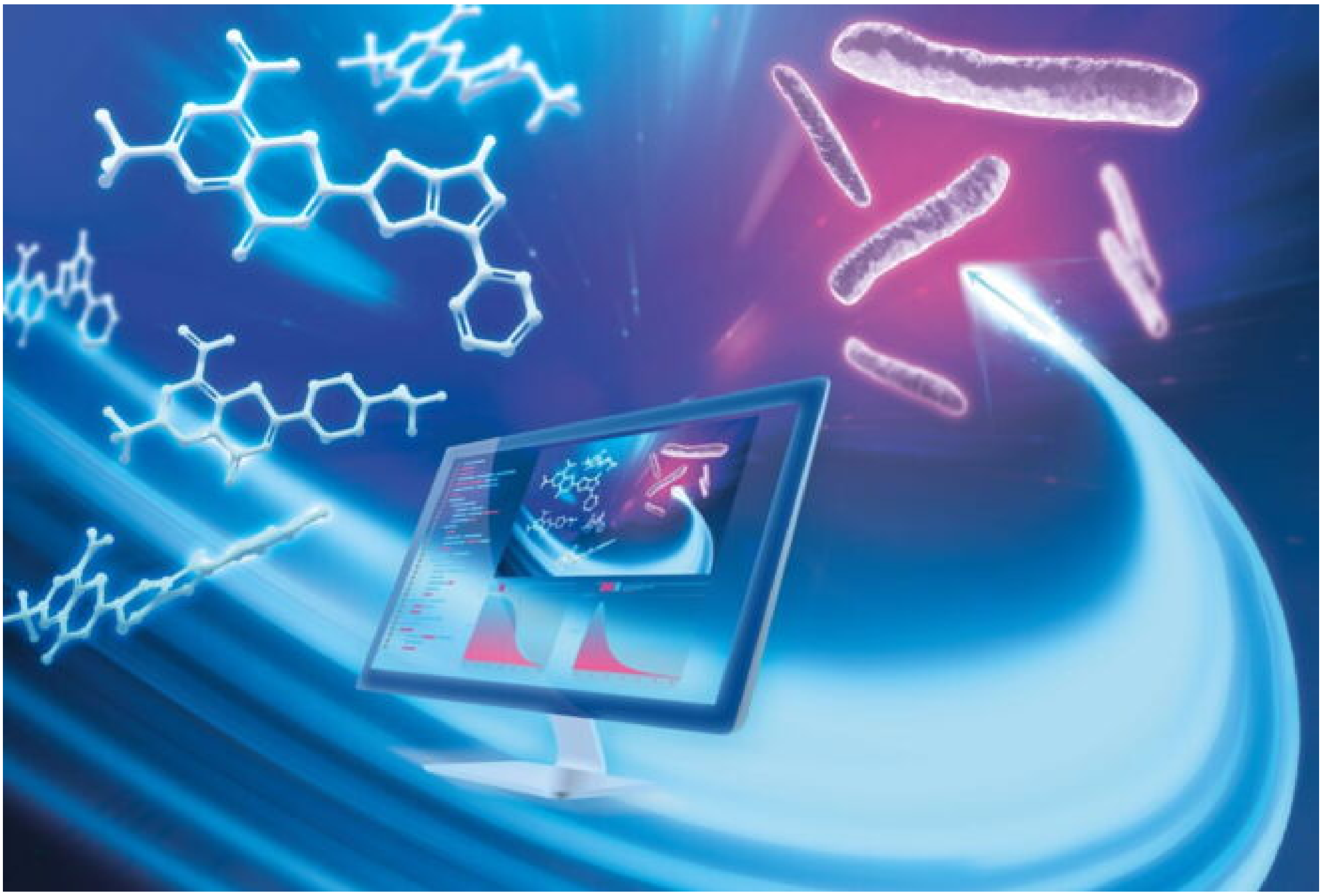

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