



# UNIVERSITY OF EMBU

## DR. MARK NJOGU KIMANI

**Name:** Dr. Mark Njogu Kimani

**Title/Qualification:** B.Sc Hons (Maseno), M.Sc (Egerton),  
Dr. rer. nat. (University of Muenster)

**Position:** Lecturer

**Department:** Physical Sciences

**School:** SPAS

**Area of Specialization:**

Organic Chem/Cheminformatics/Nanotechnology

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### Short Biography

Dr. Kimani holds a Dr.rer.nat. in Organic Chemistry from University of Muenster (Germany). He is an alumnus of Egerton University and Maseno University. Dr. Kimani is an expert in medicinal Chemistry of natural products, isolation, structure elucidation, computer aided medicinal chemistry (molecular modelling and QSAR studies), and pharmaceutical nanotechnology of natural products.



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## Research Interests

- Isolation and structure elucidation of bioactive natural products from plants and microorganisms
- Structure-activity relationships of bioactive natural products
- Analytical methods development and standardization of herbal drug material.
- Herbal drugs repurposing-new pharmacological activities of traditional herbs.
- Development of natural products nanoformulations for pharmaceutical applications

## Publications in Journals:

1. **Njogu M. Kimani**, Solveig Backhaus, Josphat C. Matasyoh, Marcel Kaiser, Fabian Herrmann, Thomas J. Schmidt, Klaus Langer. Preparation of sesquiterpene lactone-loaded PLA nanoparticles and evaluation of their antitrypanosomal activity. *Molecules* 24(11), 2110 (2019); doi: 10.3390/molecules24112110.
2. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Mauro S. Nogueira, Gustavo H. G. Trossini, Thomas J. Schmidt. Complementary quantitative structure-activity relationship models for the antitrypanosomal activity of sesquiterpene lactones. *International Journal of Molecular Sciences* 19, 3721 (2018), doi:10.3390/ijms19123721.
3. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Sesquiterpene lactones from *Vernonia cinerascens* Sch. Bip. and their in vitro antitrypanosomal activity. *Molecules* 23(2), 248 (2018); doi: 10.3390/molecules23020248.
4. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Antiprotozoal sesquiterpene lactones and other constituents from *Tarchonanthus camphoratus* and *Schkuhria pinnata*. *Journal of Natural Products*, 81(1), 124-130(2018); doi:10.1021/acs.jnatprod.7b00747.
5. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Anti-Trypanosomatid Elemanolide Sesquiterpene Lactones from *Vernonia lasiopus* O. Hoffm. *Molecules* 22(4), 597 (2017); doi: 10.3390/molecules22040597.
6. Amos Kanyora, Thomas Kinyanjui, Samuel Kariuki, **Mark Njogu**. Fluoride removal capacity of regenerated bone char in treatment of drinking water. *Asian Journal of Natural and Applied Sciences (AJSC)* 4(1), 30-36 (2015).



7. **Mark Njogu**, Josphat C. Matasyoh, Alfred C. Kibor. Rapanea melanophloeos leaf extracts against Schistosoma mansoni miracidia. Research 2, 1303 (2015); doi: 10.13070/rs.en.2.1303.
8. **Mark Njogu**, Josphat C. Matasyoh, Alfred C. Kibor. Antihelmintic activity of Teclea nobilis methanol, ethyl acetate and hexane extracts against Schistosoma mansoni. Research 1, 1234 (2014); doi: 10.13070/rs.en.1.1234.
9. **Mark Njogu**, Josphat C. Matasyoh, Alfred C. Kibor. Antischistosomal benzoic acid derivatives from Rapanea melanophloeos against the Schistosoma mansoni miracidia. Research 1, 1171 (2014); 10.13070/rs.en.1.1171.
10. **Mark Njogu**, Josphat C. Matasyoh, Alfred C. Kibor. Chemical composition and antihelmintic activity of Teclea nobilis essential oil against Schistosoma mansoni miracidia. Journal of Pharmaceutical and Biomedical Sciences 4(10), 880-886 (2014).
11. **Mark Njogu**, Josphat C. Matasyoh, Alfred C. Kibor. Isolation of four furoquinoline alkaloids from Teclea nobilis and their activity against Schistosoma mansoni miracidia. Journal of Biomedical and Pharmaceutical Research 3(4), 87-93 (2014).

#### **Presentation of Papers at Academic and Professional Conferences**

1. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Mauro S. Nogueira, Gustavo H.G. Trossini, Thomas J. Schmidt. Sesquiterpene lactones: quantitative structure-antitrypanosomal activity relationships (QSAR). In: **5th Young Researcher Meeting**, 2019, Munster, Germany (oral presentation)
2. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Solveig Backhaus, Fabian Herrmann, Klaus Langer, Thomas J. Schmidt. Encapsulation of sesquiterpene lactones with antitrypanosomal activity into PLA nanoparticles. In: **5th Young Researcher Meeting**, 2019, Munster, Germany (poster presentation)
3. **Njogu M. Kimani**, Josphat C. Matasyoh, Solveig Backhaus, Klaus Langer, Thomas J. Schmidt. PLA nanoparticles loaded with antitrypanosomal sesquiterpene lactones. In: **8th NRW Nano Conference**, 2018, Dortmund, Germany (poster presentation)
4. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Gustavo H.G. Trossini, Thomas J. Schmidt. An extended study on quantitative structure-antitrypanosomal activity relationships of sesquiterpene lactones. In: **4th International Electronic Conference on Medicinal Chemistry**, 2018. (poster presentation)
5. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Gustavo H.G. Trossini, Thomas J. Schmidt. An extended study on quantitative structure-antitrypanosomal activity relationships of



- sesquiterpene lactones. In: **3rd WWU-USP summer school**, 2018, Sao Paulo, Brazil (poster and oral presentation)
6. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Antitrypanosomal sesquiterpene lactones from *Vernonia cinerascens*. In: **Phytotherapiekongress**, 2017, Münster, Germany, Zeitschrift für Phytotherapie 38, DOI: 10.1055/s-0037-1607128
  7. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Antiprotozoal sesquiterpene lactones from *Schkuhria pinnata*, *Tarchonanthus camphoratus* and *Vernonia lasiopus*. In: **2nd WWU-USP summer school 2017**, Ribeirão Preto, Brazil. Book of Abstracts, ST16, p. 16.
  8. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Antiprotozoal sesquiterpene lactones and other constituents from *Schkuhria pinnata*, *Tarchonanthus camphoratus* and *Vernonia lasiopus*. In: **65th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA)**, 2017, Basel, Switzerland. *Planta medica*, GA 2017-Book of Abstracts, DOI: 10.1055/s-0037-1608192.
  9. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. IV Antitrypanosomal elemanolide sesquiterpene lactones from *Vernonia lasiopus* O. Hoffm. In: **IV Symposium of Tropical Health/COST Action CM 1307 (WG3 and WG4) Joint meeting**, 2017, Pamplona, Spain. Book of Abstract, p. 24.
  10. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Antiprotozoal natural products from selected Kenyan plants of the family Asteraceae. In: **The 17th NAPRECA Symposium on Natural Products**, 2017, Addis Ababa, Ethiopia. Book of Abstract, P. 15.
  11. **Njogu M. Kimani**, Josphat C. Matasyoh, Marcel Kaiser, Reto Brun, Thomas J. Schmidt. Antitrypanosomatid sesquiterpene lactones from selected Kenyan plants. In: **DAAD scholarship holders meeting**, 2016, Duesseldorf, Germany. Book of Abstract, p. 20
  12. **Njogu M. Kimani**, Josphat C. Matasyoh, Alfred C. Kibor. *Rapanea melanophloeos* and *Teclea nobilis* antihelminthic secondary metabolites. In: **The 8th International KCS conference**, 2015, University of Nairobi, Nairobi, Kenya. Book of Abstract, p. 32.
  13. **Njogu M. Kimani**, Josphat C. Matasyoh, Alfred C. Kibor. *Rapanea melanophloeos* and *Teclea nobilis* antihelminthic secondary metabolites. In: **The 9th Egerton University International Conference**, 2015, Egerton University, Njoro, Kenya. Book of Abstract, p. 55.
  14. **Njogu M. Kimani**, Josphat C. Matasyoh, Alfred C. Kibor. Antischistosomal benzoic acid derivative from *Rapanea melanophloeos* against the *Schistosoma mansoni* miracidia. In: **2nd International Conference**, 2014, Laikipia University, Laikipia, Kenya. Book of Abstract, p. 68.
  15. **Njogu M. Kimani**, Josphat C. Matasyoh, Alfred C. Kibor. Miracidicidal activity of furoquinoline alkaloids from *Teclea nobilis* against the *Schistosoma mansoni* miracidia. In: **The 8th Egerton University International Conference**, 2014, Egerton University, Njoro, Kenya. Book of Abstract, p. 110.



**Books/Book Chapters Published**



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