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Google Scholar:

<https://scholar.google.com/citations?user=u2o02P8AAAAJ&hl=en&oi=ao>

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**Current Research**

**i. Cultivation of anti-malaria medicinal plant, *Artemisia annua* in Ghana**

Artemisinin-Combination therapies are used as first line treatment for managing malaria. This research sought to carry out preliminary morphological and phytochemical evaluation, as well as investigate the artemisinin content of *Artemisia annua* that was cultivated for the **first time** at University of Ghana botanical garden. Seeds of *A. annua* were cultivated and dimensions of the shoots of the germinated seedlings were taken from week one till maturity. Qualitative phytochemical analysis was performed on the powdered plant parts following standard techniques. The artemisinin contents of the leaves and stem were determined using Ultrahigh-Performance Liquid Chromatography coupled with a triple Quadrupole Mass Spectrometry (UPLC-QqQ-MS) using Multiple Reaction Monitoring (MRM) mode. Morphological observation showed that *A. annua* grew up to an average height of 36.94 cm at maturity. The leaves are lobed and have strong aromatic odour. The ethanol and petroleum ether extracts of leaves, stem and root tested positive for secondary metabolites such as phenols and alkaloids. The artemisinin content was highest in the powdered leaf (0.2% - 0.24%) while the ethanol extracts of the leaves, stem and roots contained no artemisinin. These findings serve as preliminary data for further studies on Ghana-cultivated *Artemisia annua*.

**ii. Complementary and Alternative Medicine**

Governments of Ghana have over the years put in place policies and laws to expand access and

promote rational use of traditional medicines and their usage in the healthcare delivery system. This was affirmed by the passage of a bill enacted by an ACT of Parliament in the year, 2000 (**ACT 575, Traditional Medicine Practice Act, 2000**). Patients have the choice to choose from either the orthodox or alternative medicine way of treatment. There is therefore the need for scientific investigation to validate the use of these alternative traditional remedies. Those remedies of medicinal plants which show promising activity can then be standardised and formulated for the promotion of rational use of quality, safe and efficacious traditional remedies in Ghana. This type of research therefore seeks to screen medicinal plants extracts with hypoglycaemic and antioxidant activities in order to provide a scientific knowledge that might lead to the formulation of herbal hypoglycaemic products for clinical use after their safety has been ascertained. This places the department of Pharmacognosy and **Herbal Medicine** in the University core values.

### iii. **Guinea fowl project**

Increasingly guinea fowl meat has become a delicacy relished by Ghanaians and other nationals due to the lean nature of the meat (contains 4% fat as against 7% for chicken) and its characteristic flavour and taste. Most farmers have as a result relied on the use of various plant species (without any scientific background) as coping strategies in addressing animal diseases, health and production related issues. It is imperative that these medicinal plants are investigated to provide wealth of indigenous knowledge on preventive and curative medicine existing among mostly the rural farmers to increase guinea fowl production. This project aims to enhance guinea fowl production through improved ethno-veterinary practices.

### iv. **Isolation, identification and characterisation of compounds and bioassays of extracts and compounds from ethnomedicinal plants, focusing on hypoglycaemic, anti-inflammatory, anti-infective and toxicity effects**

The project is focused on using spectroscopic methods to isolate, identify and characterise compounds from ethnomedicinal plants with anti-hyperglycaemic, anti-inflammatory and or anti-infective properties. This type of research is ongoing with collaboration from other

Institutions since the department has currently no postgraduate courses. Through such collaboration, one of such project has produced remarkable result. A medicinal plant, *Guibourtia ehie* stem bark extract has demonstrated anti-inflammatory and antioxidant activities. It also showed considerable anticancer properties *in vitro* but had poor selectivity index and thus could be toxic. Furthermore, 7,4'-dihydroxyflavone, with considerable anti-inflammatory activity, was reported from the plant **for the first time**. However, it was non-cytotoxic and this was confirmed by *in silico* studies.

### Education

2007-2012	Ph. D Pharmacognosy, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
2003-2005	M. Sc Pharmaceutical Medicine, University of Duisburg & Essen, Germany
1994-1999	B. Sc Chemistry, University of Cape Coast, Cape Coast, Ghana

### Research Experience

2011 - 2013	<b>Research Scientist</b> , Centre for Plant Medicine Research, Mampong Akuapem, Ghana
2008 - 2010	<b>Demonstrator</b> , Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

### Teaching Experience

DATE	POSITION	INSTITUTION
Feb 2016	Senior Lecturer	University of Ghana, Legon
Jan 2013	Lecturer	University of Ghana, Legon
Sep 2012	Adjunct Lecturer	University of Cape Coast

### Administrative Experience

August 2021-July 2024	Deputy Senior Tutor, Commonwealth Hall	University of Ghana, Legon
August 2018 to July 2020	Head of Pharmacognosy and Herbal Medicine Department	University of Ghana, Legon
September 12-19, 2018	Ag. Dean, School of Pharmacy	University of Ghana, Legon

### **Publications**

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- i. Isaac Kingsley Amponsah, Gina Flor Ramos, Benjamin Kingsley Harley, **Joseph Adusei Sarkodie**, Edmund Ekuadzi, Elikplim Kwesi Ampofo, Inemesit Okon Ben (2022) Anti-inflammatory, antioxidant and cytotoxic activities of *Guibourtia ehie* on human prostate (PC-3) and breast cancer (MC-7) cell lines and in silico studies on its metabolite 7,4'-dihydroxyflavone, *Chemistry Africa* 5(3):627-639. <https://doi.org/10.1007/s42250-022-00359-8>
- ii. **Joseph Adusei Sarkodie**, Seth Amponsah, Cindy Kitcher, Arthur Comney Sackeyfio, Awo Afi Kwapong, Benoit Banga N'guessan, Moses Baafi Acheampong, Lovia Allotey-Babington, Isaac Julius Asiedu-Gyekye (2022) Potential hepatic dysfunction associated with the use of the leaf and latex extracts of *Calotropis procera* W. T. Aiton (Asclepiadaceae) in Sprague-Dawley rats: an acute toxicity study, *Current Topics in Toxicology* 18:45-56.
- iii. De-Graft Gyamfi Adjei, Nana Ama Mireku-Gyimah, **Joseph Adusei Sarkodie**, Kwame Benoit Nguessan Banga, Emmanuel Kodua, Jonathan Komla Amedior, Irene Asare Lartey, Ofosua Adi-Dako, Isaac Julius Asiedu-Gyekye, Alexander Kwadwo Nyarko (2022) Antidiabetic properties of an Ethanolic Leaf Extract of *Launaea taraxacifolia* (Willd.) Amin ex C. Jeffrey (Asteraceae) in SD rats, *Clinical Phytoscience*, 8:(1), 1-15. <https://doi.org/10.1186/s40816-022-00350-3>
- iv. Benoit Banga N'guessan, Seth Kwabena Amponsah, Albert Kyei-Kankam Poakwah, Charles Brown, Ismalia Adams, Joseph Adusei Sarkodie, Ofosua Adi-Dako, Michael Adinortey, Regina Appiah-Opong, Isaac Julius Asiedu-Gyekye (2022) Effect of Metaswitch dietary supplement on anthropometric parameters, serum lipids, glucose level, oxidative stress and in vivo antioxidant properties in high fat diet-induced overweight Sprague Dawley rats, *Biomedicine & Pharmacotherapy* 149:112892. <https://doi.org/10.1016/j.biopha.2022.112892>
- v. **J A Sarkodie**, L Xiang, C Kitcher, D Zhang, N A Mireku-Gyimah, P Yeboah, P Debrah and I K Asante (2022) Preliminary studies on *Artemisia annua* L. (Asteraceae) grown in Ghana: Morphology, Microscopy and Artemisinin yield, *International Journal of Pharmaceutical Sciences and Research* 13(7): 1000-06. DOI link: [http://dx.doi.org/10.13040/IJPSR.0975-8232.13\(7\).1000-06](http://dx.doi.org/10.13040/IJPSR.0975-8232.13(7).1000-06).
- vi. Benoit Banga N'guessan, Seth Kwabena Amponsah, Ifeanyichukwu Benedict Iheagwara, Mahmood Abdulai Seidu, Samuel Frimpong-Manso, Ebenezer Ofori-Attah, Emelia Oppong Bekoe, **Joseph Adusei Sarkodie**, Regina Appiah-Opong, Isaac Julius Asiedu-Gyekye (2021) Toxicity, mutagenicity and trace metal constituent of *Termitomyces schimperi* (Pat.) R. Heim (Lyophyllaceae) and kaolin, a recipe used traditionally in cancer management in Cote d'Ivoire, *Journal of Ethnopharmacology* 276 1-11. <https://doi.org/10.1016/j.jep.2021.114147>

- vii. Nana Ama Mireku-Gyimah, Paul Owusu Donkor, Cindy Kitcher, **Joseph Adusei Sarkodie**, Emelia Oppong Bekoe, Obed Kwaku Boateng and Alexander Kwadwo Nyarko (2021) Response to Covid-19 Disease in Ghana: A Review of the Herbs, Journal of Natural remedies:21(4) 283-290.  
DOI: <https://doi.org/10.18311/jnr/2021/26515>
- viii. Cindy Kitcher, Nana Ama Mireku-Gyimah, Emelia Oppong Bekoe, **Joseph Adusei Sarkodie**, Samuel Frimpong-Manso, Gloria Tattah, Memuna Maiga & Tonny Asafo-Agyei (2021) Crude drug analysis and elemental content of the leaves and stem bark of *Adansonia digitata* L. (Malvaceae), an indigenous Ghanaian medicinal plant Plant Science Today, 8(2): 264–272.  
<https://doi.org/10.14719/pst.2021.8.2.1027>
- ix. Benoit Banga N’guessan, Adwoa Dede Asiamah, Nana Kwame Arthur, Samuel Frimpong-Manso, Patrick Amoateng, Seth Kwabena Amponsah, Kennedy Edem Kukuia, **Joseph Adusei Sarkodie**, Kwabena Frimpong-Manso Opuni, Isaac Julius Asiedu-Gyekye and Regina Appiah-Openg (2021) Ethanolic extract of *Nymphaea lotus* L.(Nymphaeaceae) leaves exhibits in vitro antioxidant, in vivo anti-inflammatory and cytotoxic activities on Jurkat and MCF-7cancer cell lines. BMC Complementary Medicine and Therapies, 1186 1-13.  
<https://doi.org/10.1186/s12906-020-03195-w>
- x. Cindy Kitcher, Nana Ama Mireku-Gyimah, **Joseph Adusei Sarkodie**, Emelia Oppong Bekoe, Tonny Asafo-Agyei, Peter Atta Agyei, Samuel Frimpong-Manso, Isaac Kwadwo Asante (2021) Pharmacognostic Standardization of the Leaf and Stem bark of *Millingtonia hortensis* Linn. (Bignoniaceae). International Journal of Pharmaceutical Research & Allied Sciences, 10(1):42-49.  
<https://doi.org/10.51847/SbSsumz>
- xi. Emelia Oppong Bekoe, Christian Agyare, Yaw Duah Boakye, Benedict Mbeah Baiden, Alex Asase, **Joseph Sarkodie**, Henry Nettey, Francis Adu, Priscilla Boatema Otu, Benjamin Agyarkwa, Patrick Amoateng, Isaac Asiedu-Gyekye, Alexander Nyarko (2020) Ethnomedicinal survey and mutagenic studies of plants used in Accra Metropolis, Ghana, Journal of Ethnopharmacology 248 (2020) 112309.  
<https://doi.org/10.1016/j.jep.2019.112309>
- xii. **Sarkodie JA**, Debrah P, Kitcher C, Frimpong-Manso S, Oppong Bekoe E, Winston O, Akoto G, Hasford C, Asiedu-Gyekye I, Banga KBN, Nyarko AK (2019) Glucose-lowering Effect and Anti-inflammatory Activity of Aqueous Leaf Extract of *Taraxacum officinale* in Wistar Rats, International Journal of Pharmacognosy and Phytochemical Research 11(4); 250-258.  
DOI: <https://doi.org/10.25258/phyto.11.4.3>
- xiii. **Joseph A. Sarkodie**, Sylvia A. Squire, Irene A. Kretchy, Emelia O. Bekoe, Charles YF. Domozero, Kurukulasuriya MJ. Ahiagbe, Emmanuella Adjei, Dominic A. Edoh, Isaac K. Amponsah, Maxwell Sakyama, Vida K. Lamptey, Seigfried Affedzi-Obresi, John L.

- Duncan, Philip Debrah, Benoit Banga N'guessan, Julius Isaac Asiedu-Gyekye and Alexander Kwadwo Nyarko (2016) Antioxidant and antimicrobial capacities of ethanolic extract of *Pergularia daemia* leaves: a possible substitute in diabetic management. *Journal of Complementary and Integrative Medicine* 13(3):239-245.  
DOI: <https://doi.org/10.1515/jcim-2015-0069>
- xiv. Irene A. Kretchy, Harry A. Okere, Joseph Osafo, Barima Afrane, **Joseph Adusei Sarkodie**, Philip Debrah (2016) Perception of traditional, complementary and alternative medicine among conventional healthcare practitioners in Accra, Ghana: implications for integrative healthcare, *Journal of Integrative Medicine*, 14(5): 380-388.  
[http://dx.doi.org/10.1016/S2095-4964\(16\)60273-](http://dx.doi.org/10.1016/S2095-4964(16)60273-)
- xv. Isaac Julius Asiedu-Gyekye, Mahmood Abdulai Seidu, Banga Benoit N'guessan, Samuel Frimpong-Manso, **Joseph Adusei Sarkodie**, Samuel Adjei, Schevadnazy Kutu, Joseph Osei-Little, Alexander Kwadwo Nyarko, Philip Debrah (2016) A dietary strategy for the management of artemether-lumefantrine-induced cardiovascular and renal toxicity. *BMC Complementary and Alternative Medicine* 16(348):1-10.  
DOI: <https://doi.org/10.1186/s12906-016-1334->
- xvi. **Sarkodie JA**, Squire SA, Oppong Bekoe E, Kretchy IA, Domozoro CYF, Ahiagbe KMJ, Twumasi MA, Edoh DA, Adjei De-Graft G, Sakyiama M, Lamptey VK, Obresi AS, Duncan JL, Debrah P, Frimpong-Manso S, N'guessan BB, Nyarko AK (2015) The antihyperglycaemic, antioxidant and antimicrobial activities of *Ehretia cymosa*, *International Journal of Pharmacognosy and Phytochemistry*.
- xvii. Thomford Kwesi Prah, Dominic Adotei Edoh, **Joseph A. Sarkodie**, Ama Kyeraa Thomford, Kennedy Essuman, Derrick Owusu (2015) Re-evaluating the efficacy of the aqueous leaf extract of *Bridelia ferruginea* and its potential combination with metformin in the management of diabetes mellitus, *Journal of Medicinal Herbs and Ethnomedicine*
- xviii. **Joseph A. Sarkodie**, Sylvia A. Squire, Irene A. Kretchy, Emelia O. Bekoe, Charles YF. Domozoro, Kurukulasuriya MJ. Ahiagbe, Emmanuella Adjei, Dominic A. Edoh, Isaac K. Amponsah, Maxwell Sakyiama, Vida K. Lamptey, Siegfried Affedzi-Obresi, John L. Duncan, Philip Debrah, Benoit B. N'guessan, Alexander K. Nyarko (2015) *Borassus aethiopum*, A Potential Medicinal Source of Antioxidants, Anti-inflammatory and Antimicrobial Agents. *Herbal Medicine: Open Access*
- xix. 2015 Hypertension management: Perspectives of complementary and alternative medicine practitioners. *Journal of Medical and Biomedical Sciences* I.A Kretchy, J.A Sarkodie, B.A Afrane, P. Debrah, P Amoateng, B.B N'guessan and E. Ninson
- xx. Benoit Banga N'guessan, Boua Narcisse Gnanoran, **Joseph Adusei Sarkodie**, Kassim Dosso, Irene Akwo Kretchy, Patrick Amoateng, Isaac Asiedu-Gyekye, David Osafo Owusu, Alexander Nyarko and Angoue Paul Yapo (2015) Alternative to Conventional Diabetic Management: The Antihyperglycaemic potential of an Ethyl Acetate Fraction Extract of *Holarrhena floribunda* *European Journal of Medicinal Plants*



- xxi. **Sarkodie JA**, Edoh DA, Kretchy IA , Aboagye FA , Appiah AA , Frimpong-Manso S, Asiedu-Gyeke JI , Nyarko AK, Debrah P , and Owusu Donkor P (2014) Alternative Therapy in Type 1 Diabetes: the effect of *Croton membranaceus* extracts International Journal of Chemistry and Pharmaceutical Sciences.
- xxii. Isaac Kingsley Amponsah, Kofi Annan, George Asumeng Koffuor, **Joseph Adusei Sarkodie**, Ifeoma Judith Umerie and Selina Osei-wusu (2014) Anti-inflammatory and antioxidant properties of the ethanolic stem bark extract of *Artocarpus Altilis* (Parkinson) Fosberg (Moraceae) Der Pharmacia Lettre.
- xxiii. **J.A. Sarkodie**, A.A. Appiah, D.A. Edoh, F.A. Aboagye, J. Asiedu-Larbi, M. Tandoh, M. Sakyiamah and K. Donkor (2014) Antihyperglycaemic and Antioxidant effects of *Croton membranaceus* mull. arg (Euphorbiaceae) International Journal of Pharmaceutical Sciences and Research
- xxiv. **Sarkodie JA**, Edoh DA, Sakyiamah M, Appiah AA, Antwi S, Nyarko AK, Owusu PD, Debrah P, Jackson NAB and Amoateng P (2013) Comparative Study of the Hypoglycaemic Property of aqueous extract of *Mangifera Indica* leaves in Streptozotocin- induced diabetic rats and genetic diabetic mice South Pacific Journal of Pharma and Bio Science
- xxv. **Sarkodie JA**, Fleischer CT, Edoh AD, Dickson AR, Mensah LK, Annan K , Woode E, Koffour AG, Appiah AA and Brew-Daniels H (2013) Antihyperglycaemic and Antioxidant effects of *Adenia lobata* Engl (Passifloraceae) in Streptozotocin Induced Diabetic Rats African Journal of Traditional, Complementary and Alternative Medicine
- xxvi. **Sarkodie J.A**, Fleischer T.C, Edoh D.A, Dickson R.A, Mensah M.L.K, Annan K, Woode E, Koffour G.A, Appiah A.A and Brew-Daniels (2013) Antihyperglycaemic activity of ethanolic extract of the stem of *Adenia lobata* Engl (Passifloraceae) International Journal of Pharmaceutical Sciences and Research
- xxvii. Fleischer TC, **Sarkodie JA**, Dickson RA , Mensah MLK, Annan K , Woode E, Koffour GA, Appiah AA (2011) Hypoglycaemic and Antioxidant Activities of the Stem Bark of *Morinda lucida* Benth in Streptozotocin Induced Diabetic Rats Journal of Pharmacognosy Communications ,

### **Conferences and Presentations**

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24th to 26th August, 2021; Medicinal Plants: A Sustainable Tool for Health and Wealth Ghana (online)  
**Chair of a Session**

26th to 27th May 2021; An International 2-Day Training on Medicinal Plants used in treating Non-Communicable Disease For Researchers, Lecturers and Scholars China (on-line), **Organiser and Moderator.**

2016 to 2020 ;Yearly training programme for manufacturers of food supplements/herbal products to generate Funds for School of Pharmacy, Ghana; **Coordinator and Organiser**

26th to 28th September, 2018 3rd Biennial Scientific Conference, College of Health Sciences, Ghana

**Participant**

4th to 13th June, 2018, Bringing Traditional Chinese Medicine (TCM) to Ghana- TCM Healthcare Generalisation, China, **Participant**.

3rd to 7th September, 2017, 65th Annual Meeting of the Society for Medicinal Plant and Natural Product Research, Switzerland. **Participant and Poster Presentation**

12th June, 2017 UG-Carnegie & Banga-Africa Projects Write-shops, Ghana, Participant

**Committee Membership**

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- |      |                 |                               |                |              |          |
|------|-----------------|-------------------------------|----------------|--------------|----------|
| i.   | 2017 to Present | Hall Council                  | Member         |              |          |
| ii.  | 2017 to Present | Hall Tutorial Board           | Member         |              |          |
| iii. | 2016 to Present | School of Pharmacy            | Member,        | Departmental | Teaching |
|      |                 | Assessment Committee (DTAC)   |                |              |          |
| iv.  | 2015 to Present | School of Pharmacy            | Academic Tutor |              |          |
| v.   | 2015 to 2020    | Training Herbal Practitioners | Coordinator    |              |          |
| vi.  | 2013 to Present | Pharmacy Christian Fellowship |                | Patron       |          |
| vii. | 2013 to 2016    | School of Pharmacy            | Invigilator    |              |          |

**Professional Membership**

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|------|---|
| i.   | <b>Member</b> , Non-Communicable Diseases Research Group, Medical and Scientific Research Centre (MSRC), University of Ghana Medical Centre (UGMC), University of Ghana, Accra, Ghana, 2021 to present. |
| ii.  | <b>Member</b> , Society for Medicinal Plants and Natural Product Research, 2015 to present.   |
| iii. | <b>Member</b> , University Teachers Association of Ghana (UTAG), 2013 to present.   |
| iv.  | <b>Member</b> , West Africa Network of Natural Products Research Scientists (WANNPRESS), 2010 to present.   |
| v.   | <b>Member</b> , Ghana Science Association, 2019 to present.   |

**Picture**

<https://sakai.ug.edu.gh/portal/site/%7E23961/tool-reset/12145893-6e0f-456b-ac31-0cb17325b6a7>



