CURRICULUM VITAE

I. **(a) Name:** Temitope Olufunmilayo, **Lawal** (Nee Odufowoke)
(b) Department: Pharmaceutical Microbiology
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II. **(a) First Academic Appointment:** Lecturer II (30 August, 2004)
(b) Present post with date: Senior Lecturer (1 October, 2011)

III. University Education (with dates)

(a) University of Ibadan, Ibadan, Nigeria	2004- 2011
(b) University of Ibadan, Ibadan, Nigeria	2002- 2003
(c) University of Ibadan, Ibadan, Nigeria	1990- 1998

IV. Academic Qualifications (with dates and granting bodies):

(a) Ph. D (Pharmaceutical Microbiology)	May, 2011 (University of Ibadan)
(b) M.Sc. (Pharmaceutical Microbiology)	October, 2003 (University of Ibadan)
(c) B. Pharm. (Bachelor of Pharmacy)	February, 1998 (University of Ibadan)

V. Professional Qualification(s) and Diplomas:

Registered Pharmacist with Pharmacists' Council of Nigeria 1998

VI. Scholarships, Fellowships and Prizes (in respect of undergraduate and postgraduate work only):

(a)Postgraduate level:

1. Schlumberger Foundation Faculty for the Future Postdoctoral Award utilized at the Department of Pharmacy Practice, College of Pharmacy, University of Illinois at Chicago, Chicago, Illinois, USA. 2015-2017

2. University of Ibadan Postgraduate School 2008/2009 session award for publication of articles from Ph. D thesis 2009

3. MacArthur Foundation Award for Overseas Training utilized at the Department of Pharmacy Practice, College of Pharmacy, University of Illinois at Chicago, Chicago, Illinois, USA. 2008

VII. Honours, Distinction and Membership of Learned Societies:

Membership of Learned Societies

1. Member, Pharmaceutical Society of Nigeria (PSN)
2. Member, Nigeria Association of Pharmacists in Academia (NAPA)
3. Member, Society for Applied Microbiology (SfAM)
4. Member, American Society for Microbiology (ASM)
5. Member, Society for Economic Botany (SEB)

Academic and Professional Honours

1. Member, Faculty of Pharmacy Induction Ceremony Committee (2005 to 2014)
2. Member, Department of Pharmaceutical Microbiology Finance Committee (2008 to 2015)
3. Faculty Representative, University of Ibadan Board of the Institute of African Studies (2009 to 2013)
4. Member, Faculty of Pharmacy Prospectus Review Committee (2010)
5. Member, Pharm. Leye Odunsi Memorial Essay Competition Committee (2010 to date)
6. Member, Faculty of Pharmacy Inaugural Lecture Committee (2011)
7. Acting Sub-Dean (Undergraduate), Faculty of Pharmacy (1 June, 2011 to 31 July, 2011)
8. Sub-Dean (Undergraduate), Faculty of Pharmacy (1 August, 2011 to October, 2013)
9. Faculty Representative on the Faculty Board of Basic Medical Science (1 August, 2011 to 31 July, 2013)
10. Faculty Representative on the Faculty Board of Science (1 August, 2011 to 31 July, 2013)
11. Member, Senate Committee on General Studies programme (June, 2011 – August, 2013)
12. Member, Committee on the Modalities for Computation of results for Admission exercise (CMCRAE), University of Ibadan (2011 - 2013)
13. Congregation Representative on the Senate of the University of Ibadan (2011 - 2013)
14. Examination Officer, Department of Pharmaceutical Microbiology (2014 - 2015)
15. Reviewer for the following journals:
    - Pharmaceutical Biology
    - Nigerian Journal of Gastroenterology and Hepatology
    - African Journal of Biomedical Research
    - Archives of Basic and Applied Medicine
    - Journal of Ethnopharmacology (2017)
    - African Journal of Microbiology Research
16. External Examiner, Department of Pharmaceutical Microbiology, Faculty of Pharmacy, Olabisi Onabanjo University, Ago-Iwoye (2012/2013 and 2013/2014 sessions)
17. Member, MCPD/Foreign Pharmacy Graduate Orientation Programme (FPGOP)/Seminar Committee (April, 2018 to date).
18. Postgraduate Coordinator, Department of Pharmaceutical Microbiology (01 September, 2018 to date).
19. Member, Animal Care and Use Research Ethics Committee (ACUREC), University of Ibadan (01 April, 2019 to date).

VIII. Details of Teaching Experience at University Level:

Undergraduate work

PHM 201: Introductory Pharmaceutical Microbiology
PHM 301: Applied Pharmaceutical Microbiology I
PHM 302: Sterilization and Sterile Products
PHM 401: Applied Pharmaceutical Microbiology II
PHM 501: Applied Pharmaceutical Microbiology III
PAA 502: Veterinary Pharmacy
PAA 501: Undergraduate Project supervision

Postgraduate work

PHM 701: Microbial spoilage and preservation
PHM 705: Chemical Disinfection
PHM 708: Sterilization and Sterile Products
PCH 725: Microbiological Methods in Drug Analysis

Postgraduate Student Supervision

Master of Science

Completed

1. Bamiduro, T. B.: Ethnobotanical survey and antibacterial potentials of *Terminalia glaucescens* and *Anogeissus leiocarpus* on Mycobacteria species
2. Eze, E. C.: Antifungal activities of *Cajanus cajan* and *Monodora myristica* in mucosal and submucosal dermatophytosis
3. Adamsom, T. L.: Antibacterial effects of *Canna indica*, *Carica papaya* and *Musa paradisiaca* on *Helicobacter pylori*
4. Jumbo, O. M.: Antimicrobial evaluation of *Dillenia indica* L. and *Anogeissus leiocarpus* (DC.) Guill. & Perr. extracts/fractions on *Helicobacter pylori* and non-tuberculous mycobacteria.
5. Ottun S. O: Antibacterial potentials of lactic acid bacteria isolated from cat against pathogens isolated from the same cat.
6. Aizebeoje I. C: Antibacterial potentials of lactic acid bacteria isolated from rabbit against pathogens isolated from the same rabbit.
7. Fabowale J. A: *In vivo* and *in vitro* antimicrobial evaluation of two Nigerian medicinal plants on commonly infectious dermatophytes.

In Progress

Doctor of Philosophy (Ph. D. Supervision)

1. Olorunnipa T. A.: Genetic basis for multidrug-resistant *Citrobacter* species in Southwestern States of Nigeria and its susceptibility to extracts/compounds of selected indigenous medicinal plants.
2. Igbokwe C. O.: Antimicrobial and toxicity potentials of edible medicinal mushrooms on selected pathogenic clinical isolates.

IX. Research:

(i) Completed

1. Anti-microbial and gastro-protective properties of *Eucalyptus camaldulensis* and *Eucalyptus torelliana* F. Muell. crude extracts
2. The effect of *Cnidoscolus acnitifolius* on multi-drug resistant micro-organisms
3. Antimicrobial evaluation of plants commonly used in the management of psychosis opportunistic infections

(ii) In Progress

(1) *Antibacterial potentials of medicinal plants used locally in the treatment of respiratory tract infections against rapidly growing Mycobacteria species:*

The use of herbs in folklore medicine for the cure of respiratory tract diseases is an age-long practice that is widely accepted among the rural population. This study is aimed at sourcing for alternative therapeutic agents from natural sources especially medicinal plants for the treatment of tuberculosis the incidence and drug resistance of which has become a global burden with the advent of HIV/AIDS. The approach is to indirectly and cautiously target *Mycobacterium tuberculosis* (*Mtb*) by using the rapidly growing mycobacteria species that are less virulent but also pathogenic. These species are known to share some gene homologues with *Mtb* and the same unusual cell wall structure. To this end, plant species such as *Uvaria afzelli, Tetracera alnifolia, Eucalyptus camaldulensis, Eucalyptus torelliana, Ceiba pentandra, Cordia sebestena* among others have been screened for antibacterial activity against *Mtb* and some rapidly growing mycobacteria species. It is expected that pure compounds with anti-mycobacterial activity will be isolated from these plants by bioassay-guided fractionation techniques.

(2) *Antibacterial and anticancer activities of medicinal plants used in the treatment of gastrointestinal diseases:*

Helicobacter pylori has been reported to infect more than 50% of the world's population with the highest incidence of infection in the developing world. Treatment regimen is often cumbersome leading to development of resistance to antibiotics and consequently complications from untreated infections. Sometimes cancer can develop/arise from infections with pathogens or as complications from untreated infections. Of such is gastric cancer which is known to result from infection with *Helicobacter pylori*- a class 1 carcinogen. A promising treatment alternative is to encourage the use of herbs and medicinal plants reportedly used for the management of gastrointestinal diseases. The aim of this study is to investigate the activity of selected medicinal plants that are used locally for the treatment of gastrointestinal diseases and gastric cancer in which *H. pylori* has been implicated. Plants were selected from ethnobotanical survey and interactions with different herb sellers at various markets in Ibadan, Oyo State. Some of these plants (including herbs and spices such as *Zingiber officinale, Theobroma cacao, Abelmoschus esculentus, Myristica fragrans, Curcuma longa*) demonstrated good antibacterial activity against *Helicobacter pylori* and thus justify their use in traditional medicine. The expectation is that these plants will exhibit antibacterial activity against *H. pylori* and cytotoxicity activity in gastric and related GIT cancers with goal of encouraging the consumption of such selected herbs/spices/mushrooms as a therapeutic alternative in gastrointestinal disease and possibly isolate pure bioactive compounds.

(3) *Antifungal activities of medicinal plants extracts/compounds in mucosal and submucosal dermatophytosis:*

Infection with dermatophytes usually does not cause mortality but it does cause morbidity and poses a major public health problem especially in tropical countries due to the hot and humid climate. Medicinal plants have played a major role in the management of dermatophytes infection which often times are very difficult to treat. This study aims to source for alternative anti-dermatophytic agents from plants reportedly used for treatment of dermatophytes infections. The *in vitro* and *in vivo* anti-dermatophytic activities of *Terminalia glaucescens* and *Massularia acuminata* have been

studied in commonly infectious dermatophytes and were found to possess good activity against the test organisms. Other plants are being evaluated for their anti-dermatophytic effect. It is expected that the plants under investigation will significantly inhibit/kill the test dermatophytes and thus be further studied for the mechanism of anti-dermatophytic action.

(4) *The antimicrobial activities of medicinal plants/probiotics against multi-drug resistant zoonotic pathogens isolated from domestic animals:*

Man and domestic animals most times co-habit with the possibility of transmission of pathogens/infections from the animal to man. This poses danger to man when such zoonotic pathogens develop resistance to antimicrobial agents. This study aims at justifying the use of medicinal plants and/or probiotics to treat such infections/diseases. To this end, probiotics (such as lactic acid bacteria) will be isolated from rabbits and cats and used as antimicrobial agents against pathogenic organisms that were isolated from the same animals. It is known that pathogenic organisms will most times be susceptible to probiotics isolated from the same source as the pathogens and thus it is expected that zoonotic pathogens will be sensitive to probiotics isolated from the animal.

(iii) <u>Project, Dissertation and Thesis:</u>

(i) **Odufowoke, R. O.** (1998). The preliminary *in-vitro* antimicrobial properties of *Albizia zygia* (Mimosaceae) and *Aspilia africana* (Compositae) (B. Pharm. Project)

(ii) **Odufowoke, R. O.** (2003). An investigation into the antimicrobial, wound-healing and ulcer-protective properties of *Eucalyptus camaldulensis* and *Eucalyptus torelliana* F. Muell (M. Sc. Dissertation)

(iii) **Lawal, T. O.** (2011). Effects of *Eucalyptus camaldulensis* Dehnh. and *Eucalyptus torelliana* F. Muell. extracts on *Helicobacter pylori, Mycobacterium tuberculosis* and ulcer-healing in rat. (Ph. D. Thesis)

X. <u>Major Conferences Attended with Papers Read (in the last 5 years)</u>:

1. Developments in Botanical Dietary Supplements Research from 1994 to Today". Organized by College of Pharmacy, University of Illinois at Chicago, Illinois, USA. 23 March, 2010.

Paper read: Lawal, T. O., Adeniyi, B. A., Moody, J. O. and Mahady, G. B. Combination studies of *Eucalyptus torelliana* F. Muell. leaf extracts and Clarithromycin on *Helicobacter pylori.*

2. 16th Annual Oxford International Conference on the Science of Botanicals and the 5th Interim American Society of Pharmacognosy Meeting, Oxford Mississippi, USA. April 11-14th, 2016.

Paper read:

i. **Lawal, T. O.**, Slover, C., Lee, V. and Mahady, G. B. Ginger (*Zingiber officinale* Roscoe, Zingiberaceae) extract and 10- gingerol enhance the activity of clarithromycin against resistant *Helicobacter* strains. Planta Medica 2016; 82 - OA33.

ii. **Lawal, T. O.**, Slover, C., Lee, V. and Mahady, G. B. *In vitro* susceptibility of oral pathogens to traditional medicines used to treat gingivitis and peridontal infections. Planta Medica 2016; 82 - PB29.

iii. **Lawal, T. O.**, Schriever, C., Pendland, S. L. and Mahady, G. B. *In vitro* susceptibility of *Chlamydia pneumoniae* to extracts of *Curcuma longa* L. and *Zingiber officinalis* L. (Zingiberaceae). Planta Medica 2016; 82 - PB30.

3. 17th Annual Oxford International Conference on the Science of Botanicals, Oxford Mississippi, USA. April 2-6th, 2017.

Paper read:

i. **Lawal, T. O.,** Mahady, G. B. Patel, S. R., Raut, N. A. and Wicks, S. Ergocalciferol induce apoptosis in breast and colon cancer cell lines via caspase 3/7 and 8 and has synergistic effects with cholecalciferol and all-trans-retinoic acid.

ii. **Lawal, T. O.,** Patel, S. R. and Mahady, G. B.: Susceptibility of AGS and NCI-N87 gastric cancer cells to Nigerian medicinal plants used for the treatment of *Helicobacter pylori* infections.

iii. Mahady, G. B., Patel, S. R., **Lawal, T. O.,** Raut, N. A. and Wicks, S. Novel mechanisms of action for black cohosh (*Actaea racemosa* L.) extracts.

iv. Mahady, G. B., **Lawal, T. O.,** Patel, S. R., Salamon I, Raut, N. A. and Wicks, S. *Ribes nigrum* L. (Grossulariaceae) and *Sambus nigra* L. (Adoxaceae) extracts enhance growth and inhibit apoptosis in rat L6 muscle cells.

v. Raut, N. A., **Lawal, T. O.,** Patel, S. R. and Mahady, G. B. Inhibitory effect of *Nymphaea odorata* on gastric cancer cell lines AGS and NCI-N87: Correlation to *Helicobacter pylori* infection.

vi. Raut, N. A., **Lawal, T. O.,** Patel, S. R. and Mahady, G. B. Methanol extracts of *Nymphaea odorata* Aiton (Nymphaeaceae) roots are cytotoxic in MCF-7 cell lines and induce apoptosis.

4. American Society of Pharmacognosy 2017 Annual Meeting, Portland, Oregon, USA. July 29 – August 2, 2017.

Paper read:

i. **Lawal, T. O.,** Patel, S. R. and Mahady, G. B.: Cytotoxic effects of *Anogeissus leiocarpus* extracts in colon cancer cell lines and induction of apoptosis in SW480 cells through Caspase 8.

ii. **Lawal, T. O.,** Patel, S. R. and Mahady, G. B.: Induction of apoptosis in MCF-7 cells by extracts of *Dillenia indica* L. and *Anogeissus leiocarpus* (DC.) Guill. & Perr.

iii. Raut, N. A., Patel, S. R., **Lawal, T. O.** and Mahady, G. B.: Black Cohosh and 23-Epi-26-Deoxyactein modulate histone deacetylase (HDAC1) and have biphasic effects on granulosa cells.