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● WORK EXPERIENCE

29/11/2015 – CURRENT – Cairo, Egypt

TEACHING ASSISTANT OF VIROLOGY – FACULTY OF VETERINARY MEDICINE, CAIRO UNIVERSITY

ACADEMIC AND TEACHING RESPONSIBILITIES

A) Participation in teaching undergraduate courses

1. Molecular Biology Course 155 (Practical sessions and lab instructions): 2015 – present.
2. General Virology Course VIR-304 (Practical sessions and lab instructions); 2015 – present.
3. Veterinary Virology Course VIR-355 (Practical sessions and Lab. instructions); 2015 – present.
4. Summer Training Course 357 (Practical sessions and Lab. instructions); 2015 – present
5. General virology course VIR-304 (Practical sessions and lab instructions) in Arabic; 2017- present.
6. Veterinary virology Course VIR-355 (Practical sessions and lab instructions) in Arabic; 2017-present.

B) SCHOLAR AND LABORATORY RESPONSIBILITIES

1- Participation in Nationally and Internationally funded Projects

- Project Entitled "Development of a competitive internal positive control (CIPC) to improve the Avian influenza H5N1 rapid detection molecular assay" and the financial manager of the project funded by Cairo University (ended in December 2019).
- Participated in the research team from AHRI and Faculty Of Veterinary Medicine Cairo University in a research project submitted to STDF 1700 KLE Entitled "Toward the development of an Egyptian SARS-CoV-2 DNA vaccine" May 2020, submitted to STDF (accepted and running).
- Participated in the research team in a research project submitted to STDF 1500 KLE Entitled "Development of an Early Warning System for Rapid Detection of Foot and Mouth Disease Virus Serotypes" January 2016.

2- Taking part in research in the department working on different viruses

3) COMMUNITY SERVICES

1. participation in diagnostic service of the lab.
2. volunteering in vet medical visits

4) MANAGERIAL WORK

- Management of financial contracts with companies, and the lab and projects.
- participation and organization of Newton Mosharafa workshop held in Cairo In 2016
- selected as permanent member of organization committee of international scientific conference of Egyptian Society Of Virology (ESV)

5) PUBLISHED RESEARCH

- **Scopus:** <https://www.scopus.com/authid/detail.uri?authorId=57213266629>
- Differentiation of Capripox Viruses by Nanopore Sequencing (doi.org/10.3390/vaccines9040351)
- Suitcase Lab for Rapid Detection of SARS-CoV-2 Based on Recombinase Polymerase Amplification Assay (doi.org/10.1021/acs.analchem.0c04779).
- A novel bivalent Pasteurellosis-RHD vaccine candidate adjuvanted with Montanide ISA70 protects rabbits from lethal challenge.(doi: 10.1016/j.sjbs.2019.12.042).
- Evaluating two approaches for using positive control in standardizing the avian influenza H5 reverse transcription recombinase polymerase amplification assay. (doi: 10.1016/j.mcp.2020.101511.)
- LSDV100 and LSDV101 Lumpy skin disease virus-specific PCR for rapid diagnosis and vaccine quality control. (Journal of Virological Methods, In progress)
- Efficient Stable Expression of Nuclear H5N1 Avian Influenza Virus HA2 Transgene in Chlamydomonas reinhardtii (in progress)

● EDUCATION AND TRAINING

15/09/2009 – 17/06/2014 – faculty of veterinary medicine, Cairo University., El-Shaheed Gamal El-Deen Afify, Oula, Giza District, Giza Governorate, Giza, Egypt

BACHELOR OF VETERINARY MEDICINE – Cairo University, Virology Department

<https://cu.edu.eg/page.php?pg=contentFront/SubSectionData.php&SubSectionId=33>

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03/01/2016 – CURRENT – Inside Cairo Uni, Oula, Giza District, Giza Governorate, Giza, Egypt
FACULTY OF LEADERSHIP DEVELOPMENT CENTRE (FLDC) 12 COURSES – Faculty OF Leadership Development Centre (FLDC)

<http://fldc.cu.edu.eg/>

● LANGUAGE SKILLS

Mother tongue(s): ARABIC

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Microsoft Word | Microsoft Powerpoint | Social Media | Zoom | Microsoft Excel | Microsoft Office | Facebook | Power Point

● PUBLICATIONS

Differentiation of Capripox Viruses by Nanopore Sequencing

DOI: 10.3390/vaccines9040351
<https://www.mdpi.com/2076-393X/9/4/351> – 2021

Suitcase Lab for Rapid Detection of SARS-CoV-2 Based on Recombinase Polymerase Amplification Assay

DOI: 10.1021/acs.analchem.0c04779
<https://pubmed.ncbi.nlm.nih.gov/33471510/> – 2021

A novel bivalent Pasteurellosis-RHD vaccine candidate adjuvanted with Montanide ISA70 protects rabbits from lethal challenge

DOI: 10.1016/j.sjbs.2019.12.042
<https://pubmed.ncbi.nlm.nih.gov/32127779/> – 2020

Evaluating two approaches for using positive control in standardizing the avian influenza H5 reverse transcription recombinase polymerase amplification assay

DOI: 10.1016/j.mcp.2020.101511
<https://pubmed.ncbi.nlm.nih.gov/31953221/> – 2020

Efficient Stable Expression of Nuclear H5N1 Avian Influenza Virus HA2 Transgene in Chlamydomonas reinhardtii

<https://www.readcube.com/articles/10.21608%2Fvmjg.2017.7641> – 2019

underreviewing
2021

● **CONFERENCES AND SEMINARS**

27/11/2018 – 30/11/2018 – Desert rose resort, Hurghada, Egypt

Organization and participation in the seventh international conference of virology (Emerging and re-emerging viral diseases: international collaboration for control)

Biennial conference organized and prepared by the Egyptian Society of Virology, inviting vast elite of specialized Virologists and presentations of researchers or posters

21/11/2016 – 24/11/2016 – Cairo University, Cairo. Egypt

Organization & participation in the international Newton-Mosharafa researcher links workshop entitled "controlling viral infections to improve food security and the nutrition of Egypt's poorest communities"

The workshop aims to linking Egyptian and British researchers together and gathering effort to figure out the common problems in both countries

26/11/2016 – 28/11/2016 – Desert rose resort, Hurghada, Egypt

Organization and participation in the sixth international conference of virology

Biennial conference organized and prepared by the Egyptian Society of Virology, inviting vast elite of specialized Virologists and presentations of researchers or posters

30/10/2017

Organizer and trainer in HA and HI training course

The course aimed to train lab worker in poultry diagnostic sector to proceed and successfully figure out problems of Haemagglutination (HA) and Haemagglutination Inhibition (HI) as a routine serological test

16/09/2018 – 27/09/2018 – Cairo, Egypt

Participated in organization and training of Summer School: "imported and neglected infectious diseases: Joint research forces to fight global problems"

This international summer school attracted representatives from more than ten countries for discussion of virological problems and obstacles, in addition to training on recent advanced nanopore technology of sequencing

23/11/2017 – Conference hall, Arab Doctors Syndicate Building, Ramsis, Cairo, Egypt

participated as organizer of workshop titles "Dengue emergency in Egypt"

The workshop was held to discuss the probability of emergence and spread of Dengue virus in Egypt after hitting neighboring Saudi Arabia and Yamen, and what are best measures for preparedness.

● **HONOURS AND AWARDS**

2010

Scientific Certificate award – Cairo University

2014

Scientific Certificate award – Cairo University

This award was due to cumulative scientific excellence over five consecutive years of study and nomination for being staff of the University

04/2012

FIRST scientific award of the annual virology student conference – Virology Department, Faculty Of Veterinary Medicine, Cairo University

This was awarded for me and a classmate for proposal of innovative ideas in Virology.

24/11/2016

Honoring certificate for participation for successful organization of the international Newton-Mosharafa researcher links workshop entitled “controlling viral infections to improve food security and the nutrition of Egypt’s poorest communities” – Organizing committee of the event (from surrey University and Cairo University)

30/11/2018

Honoring certificate for participation for successful organization and participation in the seventh international conference of virology (Emerging and re-emerging viral diseases: international collaboration for control) – ESV committee

● **CREATIVE WORKS**

10/2016 – 02/2020

Participation in Establishment for monocellular algal growth and expression of viral proteins under domestic conditions.

The aim of the work to innovate economic feasible proper growth conditions for the highly sensitive cells and preparing them to produce desired different functional proteins.

● **NETWORKS AND MEMBERSHIPS**

07/2014 – CURRENT

Egyptian Veterinary Medical Syndicate

Cairo, Egypt

2016 – CURRENT

Member of Egyptian Society of Virology (E.S.V)

Cairo, Egypt

● **PROJECTS**

01/2021 – CURRENT

Participated in research team in project Entitled “Suitcase laboratory for rapid and sensitive detection of SARS-CoV-2 in point-of-care settings”.

05/2020 – CURRENT

Participated in the research team from AHRI and Faculty Of Veterinary Medicine Cairo University in a research project submitted to STDF 1700 KLE Entitled “Toward the development of an Egyptian SARS-CoV-2 DNA vaccine”

2017 – 12/2019

Participated in the research team in project Entitled "Development of a competitive internal positive control (CIPC) to improve the Avian influenza H5N1 rapid detection molecular assay"

I was selected to be the financial manager of the project, determining tools and chemicals required and dealing with their providing companies. this was side by side to the scientific missions of the project. Finally, the project ended successfully in 2019.

01/2016

Participated in the research team in a research project submitted to STDF 1500 KLE Entitled "Development of an Early Warning System for Rapid Detection of Foot and Mouth Disease Virus Serotypes"

this projects took too long for judgment, so it was leaved to spare another work

● **VOLUNTEERING**

2014 – 01/2016

Veterinary Doctor

Giza, Public Unit for Animal Health.

I volunteered as a part time (3 days weekly)

2014 – 01/2016

Veterinary Doctor

Giza, Public Unit for Animal Health.

I volunteered as a part time (3 days weekly)

● **ORGANISATIONAL SKILLS**

international Newton-Mosharafa researcher links workshop entitled "controlling viral infections to improve food security and the nutrition of Egypt's poorest communities"

One of the organizing committee members from the Egyptian Side.

The seventh international conference of virology (Emerging and re-emerging viral diseases: international collaboration for control)

I was elected as one of the honored organizers and was nominated as one of the permanent team for organization by the ESV.

Summer School: "imported and neglected infectious diseases: Joint research forces to fight global problems"

The main organization role accounted for me was related to technical potentiality preparation for the new NGS sequencing (Minlon sequencing) and Recombinase Polymerase Amplification (RPA).

● **TECHNICAL SKILLS**

DNA/RNA extraction and manipulation:

- DNA & RNA extraction using many traditional and modern methods,
- PCR, RT-PCR, Real Time PCR (with relative and absolute quantification of transcripts)
- recombinase polymerase amplification (RPA).
- Minlon Sequencing
- Agarose gel preparation and analysis

Viruses Manipulations in eggs and tissue culture systems

- Virus isolation, propagation, and titration in different host systems including tissue cultures and embryonated chicken eggs (ECE)
- Subculture and preservation of different types of primary and established cell lines
- Preparation of different types of cell culture media,
- Preparation of different types of primary cell cultures
- Virus cultivation in different types of cell cultures.

Serology and immunology

- Haemagglutination (HA)
- Haemagglutination inhibition (HI) assays
- Different ELISA formats,
- Agar gel precipitation test (AGPT),
- Immunofluorescence assay (IF)
- SDS-PAGE
- Western blotting analysis.
- Serum Neutralization Assays (SNT)

Bioinformatics

- Familiar with several bioinformatics software (E.g. BioEdit sequence alignment editor, SnapGene, and Laser Gene).
- Design and in silico validation of primers, probes, and molecular standards for different molecular assays.
- Phylogenetic trees and correlations determinations amongst viruses using different softwares

Molecular cloning

- Designs of synthetic fragments for cloning
- Modification of natural ones
- Genes Cloning using different methods

Lab animals

- Management and manipulation of different lab animals (mice, chicken, and rabbits)
- Sampling from different animals
- Post mortem examination