Curriculum Vitae

Personal Information	**Name:** Iman Emam Omar Gomaa **E-mail Address:** gomaa.iman@gmail.com **Mobile Number:** +20-1003371918
Education	Ph.D. in Molecular and Cellular Biology, Technical University of Munich, Germany + Faculty of Science-Ain Shams Uni. *January, 2004* ***Title of Ph.D.:*** Local Tumor Therapy with an Adenoviral Vector Containing a Transgene Under the Control of a Radiation Inducible Promotor. M.Sc. in Molecular and Cellular Biology, Copenhagen University, Denmark + Faculty of Science-Cairo Uni. *April, 1999* ***Title of M.Sc.:*** Detection of Human Papillomavirus in Different Cervical Lesions by Using Various Biomolecular Techniques. Pre-master in Genetics, Cell Biology and Histology, Faculty of Science, Cairo University. *May, 1995* B.Sc. in Biology, Faculty of Science, Cairo University. *May, 1994*
Working Experience	**1-** Professor of Molecular and Cell Biology. **"Faculty of Pharmacy, October University for modern Sciences and Arts (MSA)"** Cairo - Egypt. Cairo - Egypt. *Sept., 2024* **2-** Professor of Molecular and Cell Biology. **"Faculty of Science, Galala University (GU)"** Cairo - Egypt. *Sept., 2023* **3-** Associate Professor of Molecular and Cellular Biology. **"Faculty of Science, Galala University (GU)"** Cairo - Egypt. *Oct.2021 – Sept. 2023* 4- Associate Professor of Molecular and Cellular Biology. **"Faculty of Pharmacy, October University for modern Sciences and Arts (MSA)"** Cairo - Egypt. *Feb., 2019 – Oct. 2021* 5- Visiting Professor at **"Biotechnology Ph.D. program, Faculty of Science"**, Cairo University. *Sept. 2018 – Sept. 2022* 6- Associate Professor of Molecular and Cellular Biology. **"Faculty of Engineering and Applied Sciences, Nile University"**, Cairo – Egypt *Sept. 2017 - June 2018* 7- Acting head of ***"Pharmaceutical Biology Department, faculty of Pharmacy and Biotechnology, GUC"***, Cairo- Egypt *Jan., 2014 – Jan., 2016*

7- DAAD Guest Scientist at **"Institute fuer Experimentelle Onkologie & Therapievorschung - Klinikum rechts der Isar - Faculty of Medicine - Technical University of Munich – Germany"**. Collaborative research project, through DAAD short-term scholarship. *July 2012 – September 2012*

8- *DAAD Guest Scientist at **"Institute of Human Genetics and Anthropology, Jena University Hospital, Friederich Schiller University Jena"** Jena – Germany* *August 2010 – September 2010*

9- Lecturer at the "***Faculty of Pharmacy and Biotechnology, German University in Cairo (GUC)",*** Cairo, Egypt. *Sept. 2007–Sept. 2017*

10- Postdoctoral researcher at, **"Institute de Myologie, UMR S787 Inserm,Universite Paris VI Piere et Marie Curie**" – **"Sorbonne"** Paris, France. *April 2006 till Sept. 2007*

10- Postdoctoral researcher at, ***"Department of Molecular, Cellular and Developmental Biology Mount Sinai School of Medicine"***. NY,USA. *July 2004 – March 2006*

11- Guest Scientist at ***"Charl Ichan Institute for Gene and Molecular Medicine, Mount Sinai School of Medicine",*** USA. *May-August 2004*

12- Lecturer of Molecular Biology. at the radiation health department, National Centre for Radiation Research and Technology (NCRRT), ***"The Egyptian Atomic Energy Authority (AEA").*** *February 2004 till May 2005*

13- DAAD Ph.D. candidate at ***'Klinik und Poliklinik fuer Strahlentherapieund Radiologische Onkologie - Klinikum rechts der Isar' Faculty of Medicine - Technical University of Munich, Germany'.*** *June 00 - May 03*

14- Demonstrator at the ***'The Radiation Health Research Department, NCRRT, AEA'***. *From Jan 97 till Jan 2000*

15- Cytogenetic analyst at a program for Pre-implantation genetic diagnosis (PGD) at ***'The Egyptian IVF-ET Centre'.*** *March 1999 till March 2000*

16- Researcher at ***'The EM and Biotechnology Centre NEMROCK, Facultyof Medicine, Cairo University***'. *June 96 to June 98*
Advisor is; Prof. Dr. Mahmoud M. Mahfouze. former Minister of Health.

17- EUC – M.Sc. candidate at *'**The protein Laboratory, Panum Institute, Copenhagen University'***. *October 1995 to June 1996*

18- Cytogenetic analyst at ***'The Human Genetics Center'***. *Sept. 94 - 95*

Teaching Experience	1- Undergraduate Biotechnology courses. Faculty of Science, Molecular Biotechnology & Biomedical informatics Programs. Galala University, Suez. Egypt. General Biology, Cell Biology, Molecular Genetics, Animal Physiology and Anatomy Introduction to Biotechnology 2- Undergraduate Pharmaceutical Biotechnology courses at Faculty of Pharmacy,October Uni. for Modern Sciences & Arts, Cairo Egypt. • Cell Biology • Fundamentals of Molecular Genetics • Pharmacogenomics • Pharmaco-gene Therapy • Stem Cells Technology & Regenerative Medicine 3- Postgraduate Ph.D. courses in "***Biotechnology Department, Faculty of Science, Cairo University***". • Drug and Gene Delivery • Bio-Nanotechnology 4- Postgraduate diploma courses in Nanomedicine at "***Institute of Nano-Science and Nanotechnology", Kafr El-Sheikh University (KSU)***. • Nanotherapeutics • Nanodiagnosis and Imaging • Nanomaterials of cancer treatment • Ethics in Nanotechnology 5- Undergraduate Biology and Biotechnology courses at faculty of pharmacy and Biotechnology, German Uni. in Cairo. • General Basic Biology • Developmental Biology • Genetics & Genetic Engineering • Cell Biology
Establishment of Academic Programs	Substantial experience and Know-how at developing academic curricula and bylaws for both undergraduate and postgraduate academic programs *Examples are;* 1- Applied Biotechnology undergraduate at Nile University 2- Bioinformatics undergraduate at Nile University 3- Nanotechnology postgraduate M.Sc. at Nile University 4- Pharmacy – Pharm-D undergraduate at MSA University This has also involved joint degree programs with local and international academic entities, as well as essential involvement of stakeholder's internships for students' exposure to the job market.

Research Interests & Output	***Interests;*** • Early detection of cancer using molecular techniques • Application of different therapeutic approaches in cancer treatment (Gene Therapy, Stem Cells therapy, Photodynamic Therapy, Combinational Therapy) • Classical and Molecular Cytogenetics • Genomics, Proteomics & Metabolomics ***Output;*** ***Patent:*** Cobalt/Silver Core Shell Nanoparticles Application in Solid Tumor Treatment. WO Patent 2,011,110,186 **Publications:** 35 **ORCID ID:** http://orcid.org/0000-0003-0295-2518 **Google Scholar h-Index:** 15 **SCOPUS Index:** 14
Technical Expertise	**1- Molecular Biology Techniques:** Extraction & RE analysis of DNA and RNA from different biological samples PCR (conventional & quantitative) Blotting Techniques (SB, NB, WB & DB) Preparation of competent cells. transformation, DNA Cloning (production and RE analysis of plasmid & viral vectors) Immunohistochemical techniques (Cells & Tissues) **2- Cell Culture Techniques:** Primary culture & Cell line culture (2D & 3D cultures) Stem cells culture Toxicity assay Cellular Transformation (Transfection with plasmid vectors & Infection using viral vectors) **3- Cytogenetic & Molecular Cytogenetic Techniques:** Culture & preparation of human karyotypes (Standard karyotypes & FISH Techniques) Comet Assay; Micronucleus test & Ames test **4- Establishment of animal models** Tumor animal models (Cell transplantation) Osteoporosis models (Chemically) This involves isolation & downstream analysis of the biopsies

Grants & Awards	***Awards;*** **1- EUC – MSc. Scholarship** Copenhagen Uni. – Faculty of Medicine – Protein Lab **2- DAAD – Ph.D. Scholarship** Technical University of Munich – Faculty of Medicine – Experimental Oncology Department & Radiotherapy Clinic **3- Postdoctoral Scholarship** Mount Sinai School of Medicine – Cell, Molecular and Developmental Biology Department **4- Postdoctoral Scholarship** University of Piere et Marie Curie -– Faculty of Medicine – Myology Institute. **5- DAAD Postdoctoral Scholarship** University of Jena -– Faculty of Medicine – Institute of Human Genetics and Anthropology. **6- DAAD Postdoctoral Scholarship** Technical University of Munich -– Faculty of Medicine Faculty of Medicine – Experimental Oncology Department & Radiotherapy Clinic. ***Grants;*** **1- National Research Grant:** Principle investigator of STDF grant no. 26334 of 1.000.000 LE Academy of Scientific Research and Technology. **2 - National Research Grant:** Principle investigator of CSSP research grant no. 145 of 63.000 LE ($ 12000). Centre for special studies and programs (CSSP). La Bibliotheca Alexandrina Egypt **3- International patent:** Cobalt/Silver core shell nanoparticles application in solid tumor treatment. WO 2011/110186 A1 **4- International Research Grant:** RDI - project Number C2/S1. Topic: Development of Rice Bran Nutraceuticals EU- Egypt Innovation Fund Rice Bran Nutraceuticals. **5- DAAD Equipment grant:** Research equipment grant from the German Academic Exchange Services. Grant # ga43213 (20,000 Euros).

Students Theses Supervision	***Fulfilled;*** 6 Ph.D. 6 M.Sc. 40 Bachelors ***Ongoing;*** 1 M.Sc. 1 PhD
Professional Activities	***Research Consultancy;*** Research Consultant at Faculty of Health Sciences, Pharos University in Alexandria (PUA) *Spring semester, 2024* ***Editorial peer-reviewing;*** 1- Life Sciences 2- Toxicology Letters 3- Nanomaterials & nanotechnology 4- Photo diagnosis & Photodynamic Therapy 5- Journal of Nanoparticle Research 6- International Journal of Nano-medicine ***Grants Reviewing;*** 1- CSSP Funding: Center for Specialized Studies - La Bibliotheca Alexandrina (evaluated 3 grants) 2- STDF Funding: Science & Technology Development Funding – Egyptian Academy for Scientific Research and Technology 3- ASRT Funding: Academy for Scientific Research and Technology
Publications	***Journal Publications*** 1- Aya A. Sebak, Mohammad Abdel-Halim, Mostafa Abdelrahman, Gehad Mohamed, Tarek El-Tayeb, and **Iman Gomaa (2024).** Nano-Mediated PDT as a Multifunctional Immunomodulatory Agent in the Intricate Milieu of Melanoma. ***Adv. Ther***.; 7(3) 2- Nihal Mohamed Elmahdy Elsayyad, **Iman Gomaa**, Mohamed A. Salem, Reham Amer, Hanan M. El-Laithy (2022). Efficient Lung-Targeted Delivery of Risedronate Sodium/Vitamin D3 Conjugated PAMAM-G5 Dendrimers for Managing Osteoporosis: Pharmacodynamics, Molecular Pathways and Metabolomics Considerations. ***J. Life Sciences;*** 309 - 121001-1210015 3- Aya Ahmed Sebak, **Iman Emam Omar Gomaa**, Aliaa Nabil ElMeshad, Mahmoud Hussien Farag, Ulrike Breitinger, Hans-Georg Breitinger and Mahmoud Hashem Abdel Kader (2020). Distinct Proteins in Protein

Corona of Nanoparticles Represent a Promising Venue for Endogenous Targeting – Part II: In vitro and in vivo kinetics study. ***Int. J. Nano Med;*** 15: 9539–9556.

4- Aya Ahmed Sebak, **Iman Emam Omar Gomaa**, Aliaa Nabil ElMeshad, Mahmoud Hussien Farag, Ulrike Breitinger, Hans-Georg Breitinger and Mahmoud Hashem Abdel Kader (2020). Distinct Proteins in Protein Corona of Nanoparticles Represent a Promising Venue for Endogenous Targeting – Part I: In vitro Release and Intracellular Uptake Perspective. ***Int. J. Nano Med;*** 15: 8845–8862.

5- Soad Nasr, Mai Rady, Aya Sebak, **Iman Gomaa**, Walid Fayad, Menna El Gaafary, Mahmoud Abdel-Kader, Tatiana Syrovets, and Thomas Simmet**(2020)**. A Naturally Derived Carrier for Photodynamic Treatment of Squamous Cell Carcinoma: In Vitro and In Vivo Models. ***Pharmaceutics.*** 12: 494 – 509.

6- Soad Nasr, Mai Rady, **Iman Gomaa**, Tatiana Syrovet, Thomas Simmet, Walid Fayad, Mahmoud Abdel-Kader **(2019)**. Ethosomes and lipid- coated chitosan nanocarriers for skin delivery of a chlorophyll derivative: A potentialtreatment of squamous cell carcinoma

7- Mai Rady, **Iman Gomaa**; Nagia Afifi; Mahmoud Abdel-Kader **(2018)**. Dermal Delivery of Fe-Chlorophyllin via Ultradeformable Nanovesicles for Photodynamic Therapy in Melanoma Animal Model. ***Int. J. Pharmaceutics***. 548: 480-490.

8- Aya Sebak, **Iman Gomaa**, Aliaa El-Meshad, Mahmoud Abdel-Kader **(2018)**. Targeted Photodynamic-Induced Singlet Oxygen Production by Peptide Conjugated Biodegradable Nanoparticles for Treatment of Skin Melanoma. ***Photodiagnosis and Photodynamic Therapy;*** 23: 181-189.

9- Aya Shoukry Sayed, **Iman Gomaa**, Michael Bader, Nesrine Salah El Dine El Sayed **(2017)**. Role of 3-Acetyl-11-Keto- Beta-Boswellic Acid in Counteracting LPS-Induced Neuro-inflammation via Modulation of miRNA-155. **Mol. Neur. Journal. (**2018) 55: 5798 – 5808.

10- **Iman Gomaa**; Aya Sebak; Nagia Afifi, Mahmoud Abdel-Kader **(2017)**. Liposomal Delivery of Ferrous Chlorophyllin: A Novel Third Generation Photosensitizer for *in vitro* PDT of Melanoma. ***Photodiagnosis andPhotodynamic Therapy; 18: 162-170***.

11- Mahmoud Elfar; Mariam Ayoub; Aya Sameh; Hazem Abass; Reham M. Abdel- Kader; **Iman Gomaa** and Islam S. M. Khalil **(2016)**. Targeted

Penetration of MCF-7 Cells using Iron-Oxide Nano-Particles In Vitro **(ICRA)**.

12- Riham F. George; Marwa A. Fouad, and **Iman E.O. Gomaa (2016)**. Synthesis and Cytotoxic Activities of Novel Pyrazoline Derivatives Bearing Phenyl Pyridazine Core. ***Europ. J. Medicinal Chemistry*. 112: 48 – 59.**

13- MF Mohamed; HA El Deeb; and **IE Gomaa**, and EH Mobarak **(2015)**. Bond Durability of Different Resin Cements to Caries-Affected Dentin UnderSimulated Intrapulpal Pressure. ***J. Operative Dentistry.* 40-51.**

14- **Gomaa I.E.;** Bhatt S.; Liehr T.; Glei M., and El-Tayeb T.A. **(2015)**. "Comparative *in vitro* study of Ag and Co/Ag nanoparticles mediated photothermal therapy of cancer". ***Egypt. J. Zool.* 63: 99 – 118**.

15- **Iman E. Gomaa**, Sara A. Abdel Gaber, Samarth Bhatt, Thomas Liehr, Michael Glei, Tarek A. El-Tayeb, Mahmoud H. Abdel-Kader **(2015)**. "Invitro cytotoxicity and genotoxicity studies of gold nanoparticles-mediated photo-thermal therapy versus 5-fluorouracil". ***Journal of Nanoparticle Research*. 17(2); 17:102**

16- ***Worldwide patent (2011):*** Cobalt/Silver core shell nanoparticles application in solid tumour treatment. Date: 07/03/2010 Application No.: PCT/EG2010/000009 Inventors: Assoc. Prof. Dr. Tarek Abd Allah El-Tayeb,Ass. Prof. Iman Omar Gomaa Assoc. Prof. Mona Mohamed Bakr. Mr. Mohamed Ahmad Ghaly & Mrs. Marwa Ali Ramadan. Institutions; Faculty of Pharmacy and Biotechnology. German University in Cairo & The National Institute for Laser Enhanced Sciences. Cairo University, Cairo, Egypt.

17- I**man Emam Omar Gomaa**, Mahmoud Hashem Abdel Kader, TaherAhmed Salah, Ola Ahmed Heikal **(2013)**. Evaluation of *in vitro* Mutagenicity and Genotoxicity of Magnetite Nanoparticles. ***Drug Discovery and Therapeutics*. 7(3):116-123**

18- Ara Parlakian, **Iman Gomaa**, Sounkary Solly, Ludovic Arandel, Alka Mahale, Gustav Born, Giovanna Marazzi, David Sassoon **(2010)**. Skeletal Muscle Phenotypically Converts and Selectively Inhibits Metastatic Cells in Mice. ***PLoS ONE*. 5(2): 1-14**.

19- Anton M, **Gomaa IE**, von Lukowicz T, Molls M, Gansbacher B, Wurschmidt F. **(2005)**. Optimization of radiation-controlled gene expression by adenoviral vectors in vitro. ***Cancer Gene Ther.*** Jul;12(7):640-6.

Book Chapters:

1- **Iman E. Gomaa**; Samarth Bhatt, Thomas Liehr, Mona Bakr, and Tarek El-Tayeb **(2015)**. Ag and Co/Ag nanoparticles cytotoxicity and genotoxicity study of HEp-2 and bloof lymphocytes. In: **Chemical Technology - Key Developments in Applied Chemistry, Biochemistry, and Materials Sceicne**. Edit. Nekane Guarrotxena; Gennady E. Zaikov; and A.K. Haghi.**Apple Academic Press Inc. & CRC Press.13-29**.

2- **Iman Gomaa**; Samarth Bhatt; Thomas Liehr; Mona Bakr and Tarek A. El-Tayeb **(2015)**. A Study on Biological Application of Ag and Co/Ag nanoparticles cytotoxicity and genotoxicity. In: **Nanomaterials and Nanotechnology for Composites – Design, Simulation and Applications**.Edit. AK Hagi; Sabu Thomas; Ali Pourhashemi, Abbas Hamrang and EwaKlodzinsk. **Apple Academic Press Inc. 139 – 153**.

3- Islam SM Khalil; **Iman EO Gomaa**; Reham M Abdel-Kader and Sarthak Misra **(2015)**. Magnetic – Based contact and non-contact manipulation of cellmockups and MCF7 human breast cancer cells. In: **Smart Drug Delivery System. ISBN: 978-953-51-4588-2**. **In Tech Europe**.

Conference Publications

1- An Investigation of the Sensing Capabilities of Magnetotactic Bacteria. Nermeen S. El-Din, Mohamed Ewis, Noura Yousry, Ola Ahmed, **Iman Gomaa**, Anke Klingner, Tijmen Hagemanz, Marc Pichelz, Mohamed E. Mitwally, Leon Abelmannzx, and Islam S. M. Khalil. IEEE. Engineering in July 17-21, 2018.

2- **Iman Gomaa**, Mohamed Ghaly, Marwa Ramadan, Mona Bakr, Tarek A. El-Tayeb **(2012)**. *In vitro* and *in vivo* photothermal therapy of cancer using laser enhanced Ag and Co/Ag nanoparticles". **Nano-Bio**

4- I**man Gomaa**, Sara E. Ali, Tarek A. El-Tayeb, Mahmoud H. Abdel-kader. Chlorophyll derivative mediated PDT versus methotrexate for breast cancer treatment. **Journal of *Photodiagnosis and Photodynamic Therapy,* 2012; 9(4): 287-384.**

5- **Iman Gomaa**, Sara E. Ali, Tarek A. El-Tayeb, Mahmoud H. Abdel-kader.Chlorophyll derivative mediated PDT versus methotrexate for breast cancer treatment. The first **International Conference of Photodynamic and Nanomedicine for Cancer Diagnosis and Therapy (ICPN)**, Cairo, Egypt, Feb. 2012.

	6- **Iman Gomaa**, Gustav Born, Giovanna Marazzi, David Sassoon. Molecular and cellular factors underlying the rarity of secondary tumour metastasis in skeletal muscles The International Conference for Molecular and Cellular Oncology **(ICMCO)**, **Egypt. Feb. 2010.** 7- **Iman Gomaa**, Giovanna Marazzi, David Sassoon. Muscle tumor interactions and hidden stem cells. **Lucca (Barga), Italy**.May 2007. 8- **'I. E.O. Gomaa**, M. Anton, T. v. Lukowicz, M. Molls, B. Gänsbacher, and F. Würschmidt. Gene Expression Under the Control of the Radiation Inducible Egr-1 Promoter in an Adenoviral Vector: Vector Optimization For Reduction of Unspecific Gene Expression in the Absence of **on Molecular Radiation Biology / Oncology, 2002, Vol. 3, S.96).** 9- **Iman E.O. Gomaa**, Martina Anton, Tobias von Lukowicz, Michael Molls, Bernd Gänsbacher & Florian Würschmidt. 'Gene Expression Under Control of the Radiation- Inducible Egr-1 Promoter in an Adenoviral Vector: VectorOptimization for Reduction of Unspecific Gene Expression in the Absenceof Irradiation'. **African Radiation Oncology Group. Proceedings of AFROGII**, Abstract: G8, S. 20. 10- F. Würschmidt, **I.E.O. Gomaa**, M. Anton, T. v. Lukowicz, M. Molls, and B. Gänsbacher. Gene expression under control of the radiation inducible Egr-1 promoter: Optimization of Ad-vector for reduction of unspecific gene expression in the absence of irradiation' at the"Proceedings of the 10th International Conference on GeneTherapy of Cancer, San Diego, USA" (Dec12th – Dec 15th 2001). **(J. ISCGT, 2001, Vol. 8, Suppl. 2, Abst. No. 112 late)**. Irradiation', (Proceedings of the **International 6th. Wolfsberg Meeting**