

Mohamed Ismail Nounou, B.Pharm., M.PSc., Ph.D.

Department of Pharmaceutics & Pharmaceutical Sciences
Faculty of Pharmacy
Alexandria University
1 El-Khartum Square
Alexandria, 21521
Egypt

Cell US: +1 806-494-5949
Cell Egypt: +2 012 21444930
Work: +2 03 4869512
Fax: +2 03 4871668
E-mail: mohamed.nounou@alexu.edu.eg
nounou@uh.edu

I. SUMMARY: Highly innovative and tenacious professional pharmaceutical formulator. More than 10 years of experience in drug formulations, pharmaceutical bioconjugation, chemical synthesis, polymeric and peptidomimetic structures design, anti-cancer drug evaluation and targeted drug delivery. Profound knowledge of physical chemistry and practical expertise in developing various formulations. Demonstrates expertise in pharmaceutical polymer chemistry, non-viral gene delivery, topical and vesicular drug delivery systems and *in-vitro/in-vivo* formulations evaluation. Extensive experience in designing, characterizing and evaluating targeted drug and gene carrier systems. Known for versatility and effectiveness in stressful situations; demonstrates "big picture" vision and sensitivity to bottom-line in order to deliver high-quality projects and tasks. Responds quickly and properly to changing circumstances; assesses problems and formulates comprehensive decisions to achieve positive change. Highly motivated creative thinker with strong data interpretation and problem solving abilities. Effective oral and written communication skills.

II. SCIENTIFIC EXPERIENCE

- Extensive experience in various biochemical and molecular biology techniques including immunohistochemistry (IHC), immunofluorescence, protein and peptide labeling, gene expression, Western Blot (WB), DNA / RNA preparation, gel electrophoresis, cell culture and flow cytometry.
- Technical experience with histologic processing of tissues, cryopreservation & sectioning and working with mammalian, cancer and stem cell lines.
- Extensive experience with numerous imaging techniques including light, fluorescence, confocal, multiphoton, scanning electron and transmission electron microscopes using different software packages such as 3i SlideBook and others.
- Extensive experience with chemotherapy distribution in brain metastases of breast cancer.
- Extensive experience in mouse models to study the brain tumors and metastases and myocardial infarction at the cellular and functional levels.
- Strong grasp of the design and the characterization of specially tailored polymers for gene and drug delivery.
- Development of genetically modified animal models for brain metastases.
- Knowledgeable about developing targeting moieties-drug bioconjugates and applying appropriate biophysical and biochemical characterization methods of protein-drug conjugates.
- Knowledgeable about physico-chemical characterization of cationic polymer (polyplexes) delivery vehicles, along with their evaluation *in-vitro* and *in-vivo*.
- Well-versed in the design, the characterization and the *in-vitro/in-vivo* evaluation of polymeric and vesicular delivery systems such as stealth liposomes, ultradeformable vesicles, ethosomes, microspheres and nanoparticles.
- Extensive experience with polymer, lipids and dosage forms stability testing.
- Adept at developing topical formulations combined with in-depth knowledge of delivery vehicles based on liposomes, micelles and polymeric/protein particles for water insoluble drugs.

- Proficient at controlling release from semi-solid and suspension formulations and polymeric-drug matrices.
- Experience with various models of *in-vitro* drug release from different formulations and dosage forms.
- Extensive experience with establishing genetically modified stable cell lines to be used for *in-vitro* and *in-vivo* evaluation of drug and gene delivery systems.
- Experienced in physico-chemical properties of drugs and their interactions with formulation excipients.
- Solid knowledge of techniques and methods development for quantitative characterization of drugs, including peptide/proteins interactions with cells, along with their the sub-cellular trafficking
- Adept at evaluating anti-proliferative and cytotoxic activity of anti-cancer agents.
- Demonstrated strong leadership skills in managing research for drug formulation development.
- Experience with analytical techniques such as ^1H and ^{13}C NMR, IR, column chromatography, HPLC and MALDI-TOF.
- Broad scope of knowledge of HPLC spectroscopy, GPC, UV and fluorescence spectroscopy, near infra-red spectroscopy, flow cytometry and immunoassays.
- Extensive experience with radio labeling and radiopharmaceuticals handling and analysis.
- Strong grasp of the design, synthesis and the characterization of specially tailored polymers and peptidomimetic structures for gene and drug delivery.

III. ACADEMIC QUALIFICATIONS

Doctor of Philosophy (Pharmaceutics) (Jun 2007 - Dec 2011)	Department of Pharmacological & Pharmaceutical Sciences University of Houston, Houston, Texas Dissertation title: ' Novel lysine-based reducible copolymers for intracellular gene delivery '
Master of Science (Pharmaceutics) (Jan 2002 – Apr 2005)	Department of Pharmaceutics, Faculty of Pharmacy Alexandria University, Alexandria, Egypt Dissertation title: ' Pharmaceutical study of some topical drug delivery systems '
Bachelors in Pharmacy (1997 - 2001)	Department of Pharmaceutics, Faculty of Pharmacy Alexandria University, Alexandria, Egypt

IV. WORK EXPERIENCE

Assistant Professor (April 2013–Present)	Department of Pharmaceutics, Faculty of Pharmacy, Alexandria University, Egypt My current assistant professor job involves teaching different classes for undergraduate bachelors of pharmacy and clinical pharmacy students and postgraduate PharmD, M.PSc. and Ph.D. students. It also involves conducting research and supervising M.PSc. and Ph.D. graduate students in my laboratory.
Visiting Assistant Professor (Sep 2014–Nov 2014)	Department of Pharmaceutical and Pharmacological Sciences (DSF), Università degli Studi de Padova, Italy
Research Associate (Jan 2012 – April 2013)	Texas Tech University, Health Sciences Center School of Pharmacy, Department of Pharmaceutical Sciences, Amarillo, TX Developing genetically modified stable cancer cell lines to study the mechanism of drug uptake in metastatic breast cancer cells in the brain.
Teaching Assistant (Aug 2007 - Dec 2011)	University of Houston Conducting problem-solving sessions and grading pharmaceutics and drug delivery examinations for PharmD students.

Lecturer Assistant
(May 2005 - Jul 2007)

Department of pharmaceuticals, Alexandria University, Egypt.
Supervising problem-solving and practical sessions as well as grading pharmacokinetics, pharmaceuticals and drug delivery examinations for PharmD and bachelors of pharmacy students. Preparation of lecture's materials for pharmaceuticals, drug delivery and pharmacokinetics classes.

Teaching Assistant
(Jul 2001 - Apr 2005)

Department of pharmaceuticals, Alexandria University, Egypt.
Conducting problem-solving and practical sessions as well as grading pharmacokinetics, pharmaceuticals and drug delivery examinations for PharmD and bachelors of pharmacy students.

V. PROFESSIONAL ACTIVITIES

A. Professional Organizations Memberships

- American chemical society, **ACS** (2009-current).
- Golden key international honor society (2009-2013).
- Controlled release society, **CRS** (2008-current).
- American association of pharmaceutical scientists, **AAPS** (2007-current).
- Biomedical engineering society, **BMES** (2007-current).
- American society for cell and gene therapy, **ASCGT** (2007-current).
- American association of cancer research, **AACR** (2012-current).

B. Journal Reviewer

- International Journal of Pharmaceutics (**IJP**).
- Asian Journal of Pharmaceutics (**AJP**).
- Journal of Pharmacy and Bioallied Sciences (**JPBS**).
- Drug Delivery.
- Chronicles of Young Scientists.
- Pharmaceutical Patent Analyst.
- Therapeutic delivery.
- International Journal of Pharmaceutical Sciences and Developmental Research.

C. General Activities

- Head of the Leadership and Governance file, Quality Assurance and Accreditation Program (QAAP), Faculty of Pharmacy, Alexandria University, Egypt (2014-Current).
- Information Technology Unit (IT Unit) and Drug Information Center (DIC) executive director, Faculty of Pharmacy, Alexandria University, Egypt (2013-Current).
- Awareness & Advertising Committee Coordinator, Faculty of Pharmacy, Alexandria University, Egypt (2014-Current).
- Coordinator of Student Activities, Faculty of Pharmacy, Alexandria University, Egypt (2013-Current).
- International Relations Office, Medical center branch, executive director, Alexandria University, Egypt (2014-Current)
- Quality Assurance, Curriculum and Accreditation committee, Faculty of Pharmacy, Arab Academy For Science and Technology (AAST), Alexandria, Egypt (2014-Current).

VI. TEACHING EXPERIENCE

My academic work in the Department of Pharmaceutics (Alexandria University, Egypt, University of Padova, Italy and University of Houston; Houston, TX) as an assistant professor/teaching assistant included teaching various practical and theoretical courses in a variety of subjects in the field of pharmaceutical sciences and formulation aspects such as pharmaceutical calculations, solid dosage forms, semisolid dosage forms., liquid dosage forms, novel drug delivery systems, topical and transdermal drug delivery systems, kinetics and pharmacokinetics, biopharmaceutics., cosmeceutical formulations, controlled drug delivery systems, bioresponsive carrier systems., basic physical pharmacy, pharmaceutical stability testing, advanced topics in drug delivery, colloidal carrier systems, cosmeceutical formulations, drug design, history of pharmacy and peptide-based and peptidomimetic structures in drug delivery.

A summary of my teaching experience is tabulated as follows:

Course Title	Code	University	Department	Degree	Semester	Year	Role	% Load	Practical Sessions	Level
Advanced Pharmaceutics I	PP-401	Alexandria University, Egypt	Pharmaceutics	B.Pharm	Fall	'02	Teaching Assistant (TA)	40%	Yes	Undergraduate
Advanced Pharmaceutics II	PP-402				Spring	'02				
Biopharmaceutics and pharmacokinetics	PP-301				Fall	'02-'06		25%		
Pharmaceutical dosage forms III	PP-302				Spring	'02-'06				
Dosage Forms & Calculations	BSPH-3301	University of Houston, USA	Department of Pharmacological and Pharmaceutical Sciences	Pharm.D	Fall	'08-'09		40%	NA	
Dosage Forms II & Biopharmaceutics	PHPS-3303				Spring	'09-'10				
Advanced Pharmaceutics I	PCEU-6342				Fall	'07-'09				
Pharmaceutics I	PECU-4430				Fall	'07-'10				
Pharmaceutics II	PECU-4331			Spring	08-'11					
Controlled Drug Delivery Systems	DP-303	Damanhour University, Egypt	Pharmaceutics		Spring	'14	Course coordinator & Teacher	40%	Yes	
Ethics and History of Pharmacy Practice	PHR-110	Pharos University, Egypt	Pharmaceutics		Spring	'15		70%	NA	
Physical Pharmaceutics II	PP-103	Alexandria University, Egypt	Pharmaceutics	B.Pharm	Fall	'13	Course coordinator, Teacher & Practical sessions moderator	25%	Yes	
Cosmetic Formulations	PP-303				Spring	'14-'15		30%		
Retail Pharmacies Summer Training	PP-316				Summer	'15	Academic Supervisor	10%	NA	
Cosmeceutical Formulations in Clinical Practice	PTE-13		Pharmacological and Pharmaceutical Sciences	B. Clinical Pharm.	Fall	'13 & '15	Course coordinator & Teacher	80%		
Drug Information	PP-015				Spring	'13-'15		60%		
Hospital Summer Training	PP-703			Summer	'14	Academic Supervisor	33%			
Pharmaceutical Technology	FA02043794	University of Padua, Italy	Dipartimento Di Scienze Del Farmaco (DSF)	B.Pharm	Fall	'14	Teacher	40%	NA	Graduate
Seminar Sessions	901702	Alexandria University, Egypt	Pharmaceutics	M.PSc.	Fall	'13	Academic Supervisor	33%		
Scientific Writing	900706		Pharmacological and Pharmaceutical Sciences	M.PSc.	Spring	'14-'15	Teacher	33%		
Biostatistics	PD-412			Pharm.D	Fall	'13	Course coordinator & Teacher	100%		
Peptide based and peptidomemetic structures in Drug Delivery	901703		Pharmaceutics	M.PSc.	Spring	'13-'15		60%		
Advanced Controlled Drug Delivery Systems II	901803			Ph.D.	Spring	'13-'15		33%		

VII. Awards And Scholarships

- Erasmus Mundis Action 2 "Al Idrisi" Grant (2013-2401/001-001-EMA2) (2014)
- University of Houston, College of Pharmacy Scholarship (Fall 2010).
- Dr. Bhagavan Jandhyala Endowed Scholarship (Fall 2009).
- International polyolefin Conference and the Division of Polymer Additives and Modifier of the Society of Plastic Engineers Scholarship (Spring 2009).
- Dr. Bhagavan Jandhyala Endowed Scholarship (Fall 2008).
- Ph.D. Grant from the Egyptian government (2006).

VIII. PUBLICATIONS

A. Review Articles And Peer Reviewed Journal Publications

- 1- Fatema El Amrawy and **Mohamed Ismail Nounou**, Are Currently Available Wearable Devices for Activity Tracking and Heart Rate Monitoring Accurate, Precise, and Medically Beneficial?, Health Informatics Research (HIR), 2015 October; 21(4):315-320.
- 2- **Mohamed I Nounou**, Chris E Adkins, Heidi Villalba, Tori B Terrell, and Paul R Lockman; "NKTR-102 in Breast Cancer Brain Metastasis Model."; BMC Cancer, (2015) 15:685 .
- 3- **Mohamed I Nounou**, Fatema Elamrawy, Nada Ahmed, Kamilia Abdelraouf, Satyanarayana Goda and Hussaini Syed-sha-Qhattal; "Breast Cancer: Conventional Diagnosis and Treatment Modalities and Recent Patents and Technologies "; Breast Cancer: Basic and Clinical research, 2015:9 (s2) P. 17-34.
- 4- Ghada El-Haddad, Fatema El Amrawey, Ola ElGaddar, Ahmed ElYazbi, Ahmed Ashera and **Mohamed Ismail Nounou**; "Male enhancement Nutraceuticals in the Middle East market: Claim, pharmaceutical quality and safety assessments"; International Journal of Pharmaceutics, 492 (2015) 109–119.
- 5- **Mohamed Ismail Nounou**, Fatema El Amrawey, Ghada El-Haddad and Ahmed Eshra; "Safety And Efficacy Assessments of Male Enhancement Drugs and Nutraceuticals Via Tailored-Designed Novel Pentagon System."; European Journal of Clinical Pharmacy, Submitted.
- 6- Chris Adkins, **Mohamed Ismail Nounou**, Rajendar Kumar Mittapalli, Tori Terrell-Hall, Afroz Mohammad, Rajaganapathi Jagannathan, Paul Lockman. A novel preclinical method to quantitatively evaluate early-stage metastatic events at the murine blood-brain barrier, Cancer Prev Res. 2015 Jan;8(1):68-76. doi: 10.1158/1940-6207.CAPR-14-0225. Epub 2014 Oct 27.
- 7-**Mohamed Ismail Nounou**; "Predicting Perfect Drug Candidates: Molecular Docking 2.0"; Journal of Pharmacy and Bioallied Sciences, 2014 Jul-Sep; 6(3): 137–138.
- 8- Salma E. El-Habashy, Alaa M. Nazief, Chris E. Adkins, Ming Ming Wen, Amal H. El-Kamel, Ahmed M. Hamdan, Amira S. Hanafy, Tori O. Terrell, Afroz S. Mohammad, Paul R. Lockman and **Mohamed Ismail Nounou**; "Novel treatment strategies for brain tumors and metastases"; Pharmaceutical Patent Analyst, 2014 May;3(3):279-96.
- 9- Chris E Adkins, Rajendar Kumar Mittapalli, Vamshi Krishna Manda, **Mohamed Ismail Nounou**, Afroz Shareef Mohammad, Tori Breanne Terrell, Kaci Ann Bohn, Celik Yasemin, Tiffany Renee Grothe, Julie Ann Lockman, and Paul Richard Lockman; "P-glycoprotein Mediated Efflux Limits Substrate and Drug Uptake in a Preclinical Brain Metastases of Breast Cancer Model."; Frontiers in Pharmacology of Anti-Cancer Drugs, 2013 Nov 4;4:136.
- 10- Rajendar K Mittapalli, Xi Liu, Chris E Adkins, **Mohamed I Nounou**, Kaci A Bohn, Tori B Terrell, Syed Q Hussaini, Werner J Geldenhuys, Patricia S Steeg, Diane C Palmieri, Quentin R Smith, and Paul R Lockman; "Paclitaxel-hyaluronic nanoconjugates prolong overall survival in a preclinical brain metastases of breast cancer model."; Molecular Cancer Therapeutics, 2013 Nov;12(11):2389-99.
- 11- Vicky V. Mody, **Mohamed Ismail Nounou** and Bikram Malavosklish; "Novel Nanomedicine-Based MRI Imaging Systems for Gynecological Malignancies."; Advanced Drug Delivery Reviews, 61 (10), 2009, Pages 795-807.
- 12- **Mohamed Ismail Nounou**, Labiba K. El-Khordagui, Nawal A. Khalafallah and Said A. Khalil; "Liposomal Formulation for Dermal and Transdermal Drug Delivery: Past, Present and Future."; Recent Patents on Drug Delivery & Formulation, Volume 2, Number 1, January 2008 , pp. 9-18(10).

- 13- **Mohamed Ismail Nounou**, Kalyopy Emmanouil, Samuel Chung, Thu Pham, Zhuoyuan Lu and Malavosklis Bikram; "Novel Reducible Linear L-Lysine Modified Copolymers as Efficient Nonviral Vectors"; Journal of Controlled Release, May 2010, 10;143(3):326-34.
- 14- Malavosklis Bikram, **Mohamed Ismail Nounou**, Dongling Li, Guilherme V. Silva, Bradley K. McConnell; "Development of nonviral Gene Delivery System for Ischemic Heart Disease"; Biophysical Journal, January 2010, 98(3): 407-408.
- 15- **Mohamed Ismail Nounou**, El-Kourdagui L., Khallafallah, N and Khalil, S.; "Liposomal dibucaine delivery system: Development and characterization"; Journal article; Continental J. Applied Sciences, 2, 2007, P. 26-37.
- 16- **Mohamed Ismail Nounou**, El-Kourdagui L., Khallafallah, N and Khalil, S.; "In vitro drug release of hydrophilic and hydrophobic drug entities from liposomal dispersions and gels"; Journal article; Acta Pharmaceutica; 57(3) , 2006.
- 17- **Mohamed Ismail Nounou**, El-Kourdagui L. and Khallafallah, N.; "Release Stability of 5-fluorouracil liposomal concentrates, gels and lyophilized powder"; Journal article; Acta Poloniae Pharmaceutica-Drug Research; 62(5); P. 381-391; 2005.
- 18- **Mohamed Ismail Nounou**, El-Kourdagui L. and Khallafallah, N.; "Effect of various formulation variables on the encapsulation and stability of dibucaine base in multilamellar vesicles"; Journal article; Acta Poloniae Pharmaceutica-Drug Research; 62(5); P. 369-379; 2005.
- 19- **Mohamed Ismail Nounou**, El-Kourdagui L., Khallafallah, N and Khalil, S.; "Influence of different sugar cryoprotectants on the stability and physico-chemical characteristics of freeze dried 5- fluorouracil plurilamellar vesicles"; Journal article; DARU; 13(4); P. 133-142; 2005.

B. Abstracts And Poster Presentations

- 1- Ola Elnoweam, Salma Soudi , D.Alian, Amal H. El-Kamel and **Mohamed I. Nounou**, Surfactant coated nanoparticles for Alzheimer: A brain uptake perspective, Controlled Release Society (CRS) annual meeting, 26-29 July 2015, Edinburgh, Scotland.
- 2- Afroz Shareef Mohammad, Chris E. Adkins, Rajendar K. Mittapalli, Tori B. Terrell-Hall, **Mohamed Ismail Nounou**, Paul R. Lockman, Characterization of changes in passive permeability and drug uptake at the blood-tumor barrier in four preclinical models of brain metastases of breast cancer, AACR Annual Meeting, 2015, April 18 - 22, 2015, Philadelphia, Pennsylvania, USA (4528).
- 3- Kaci A. Bohn, Emily R. Sechrest, Chris E. Adkins, Rajendar K. Mittapalli, **Mohamed I. Nounou**, Tori B. Terrell-Hall, Afroz S. Mohammad, Paul R. Lockman, Inhibition of VEGF and angiopoietin-2 to reduce brain metastases of breast cancer burden, AACR Annual Meeting, 2015, April 18 - 22, 2015, Philadelphia, Pennsylvania, USA (1388).
- 4- Kaci A. Bohn, Tori B. Terrell-Hall, Chris E. Adkins, Rajendar K. Mittapalli, **Mohamed I. Nounou**, Afroz S. Mohammad, Paul R. Lockman, Vascular remodeling is associated with increased permeability of experimental brain metastases of breast cancer, AACR Annual Meeting, 2015, April 18 - 22, 2015, Philadelphia, Pennsylvania, USA (5207).
- 5- **Mohamed Ismail Nounou**, Chris E. Adkins, Tori O. Torrell, Mohamed Afroz, Tim Vitalis, Reinhard Gabathuler and Paul R. Lockman "Anti-cancer antibody trastuzumab-melanotransferrin conjugate (BT2111) for the treatment of metastatic HER2+ breast cancer tumors in the brain: An in vivo study"; Poster Presentation, The American Association of Cancer Research (AACR) annual meeting, San Diego, CA, USA, April 5-9, 2014.
- 6- **Mohamed Ismail Nounou**, Ute Hoch, Chris E. Adkins, Tori O. Torrell, Heidi Villalba, Michael E. Eldon and Paul R. Lockman "Etrintecan pegol accumulates in breast cancer brain metastases and prolongs survival in an experimental model of brain metastases of human triple negative breast cancer"; Poster Presentation, The American Association of Cancer Research (AACR) annual meeting, San Diego, CA, USA, April 5-9, 2014.
- 7- Reinhard Gabathuler, Tim Vitalis, **Mohamed Ismail Nounou**, Chris E. Adkins, Paul R. Lockman and Wilfred A. Jefferies "Transcend, a protein vector for brain delivery, allows trastuzumab to reach the brain at effective concentration after incorporation to form BT2111"; Poster Presentation, The American Association of Cancer Research (AACR) annual meeting, San Diego, CA, USA, April 5-9, 2014.
- 8- **Mohamed Ismail Nounou**, Chris E. Adkins, Tori B. Terrell, Heidi Villalba, and Paul R. Lockman; "Characterization of changes in passive permeability and drug uptake at the blood-tumor barrier in four preclinical models of brain metastases of breast cancer"; Poster Presentation, The American Association of Pharmaceutical Scientists (AAPS)

annual meeting, San Antonio, TX, USA, November 10-14, 2013.

9- Ute Hoch, **Mohamed Ismail Nounou**, Chris E. Adkins, Tori B. Terrell, Heidi Villalba, Michael E. Eldon, Edith Perez, and Paul R. Lockman; "Etinotecan pegol prolongs survival in an experimental model of brain metastasis of human triple negative breast cancer"; Poster Presentation, European Cancer Congress 2013 (ECCO-ESMO-ESTRO), Amsterdam, Netherlands, September 27th-October 1st 2013.

10- Reinhard Gabathuler, Timothy Z. Vitalis, **Mohamed Ismail Nounou**, Umar Iqbal, Maria Moreno, Chris E. Adkins, Tori O. Torrell, Quentin R. Smith, Wilfred A. Jefferies, and Paul R. Lockman; " BT2111, a New Anti-Cancer Agent composed of Trastuzumab and Transcend a Vector for Brain Delivery for the Treatment of Metastatic Her2+ Breast Cancer"; Poster Presentation, AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics, Boston, MA, USA, October 19-23, 2013.

11- Ute Hoch, **Mohamed Ismail Nounou**, Chris E. Adkins, Tori B. Terrell, Heidi Villalba, Michael E. Eldon, and Paul R. Lockman; "Etinotecan pegol prolongs survival in an experimental model of brain metastasis of human triple negative breast cancer"; Poster Presentation, CTRC-AACR San Antonio Breast Cancer Symposium annual meeting, San Antonio, TX, USA, December 4-8, 2012.

12- **Mohamed Ismail Nounou**, Kaci A Bohn, Chris E Adkins, Tori B Terrell, Amit Bansal, Quentin R Smith and Paul R Lockman; " Effect of Bevacizumab on vascular permeability and drug uptake in a brain metastases of breast cancer"; Poster Presentation, The American Association of Pharmaceutical Scientists (AAPS) annual meeting, Chicago, IL, USA, October 14-18, 2012.

13- **Mohamed Ismail Nounou**, Cori Wijaya, Dongling Li, Sameer Saifuddin, Yi Zheng, Guilherme V. Silva, Bradley K. McConnell and Malavosklis Bikram; "Genetically Modified Stem Cells for the Treatment of Myocardial Infarction Using Novel Lysine-Based Nonviral Carrier System"; Poster Presentation, The 14th American Society of Gene & Cell Therapy (ASGCT) annual meeting, Seattle, WA, USA, May 18-21, 2011.

14- **Mohamed Ismail Nounou**, Sameer Saifuddin, Cori Wijaya, Dongling Li, Yi Zheng, Guilherme V. Silva, Bradley McConnell and Malavosklis Bikram; "Novel reducible lysine-based copolymers for cardiac regeneration", 16th International Symposium on Recent Advances in Drug Delivery Systems, February 15-18, 2011, Salt Lake City, Utah, USA.

15- **Mohamed Ismail Nounou**, Kalyopy Emmanouil, Samuel Chung, Thu Pham, Zhuoyuan Lu and Malavosklis Bikram; "Novel L-lysine reducible copolymers for efficient nonviral gene delivery"; Poster Presentation, The 13th American Society of Gene & Cell Therapy (ASGCT) annual meeting, Washington, DC, USA, May 17-22, 2010.

16- **Mohamed Ismail Nounou**, Kalyopy Emmanouil, Samuel Chung, Thu Pham, Zhuoyuan Lu and Malavosklis Bikram; "Lysine based bio-reducible non-viral gene delivery systems"; Podium and Poster Presentation, American Association of Pharmaceutical Scientists National Biotechnology Conference (AAPS NBC), San Francisco, CA, USA, May 16-19, 2010.

17- **Mohamed Ismail Nounou**, Kalyopy Emmanouil, Samuel Chung, Thu Pham, Zhuoyuan Lu and Malavosklis Bikram; "Efficient DNA Delivery Using Novel Bio-reducible Linear L-Lysine Modified Copolymers (LLCs)"; Poster Presentation, Alliance for NanoHealth Investigators Meeting 2010, Houston, TX, 77030, USA, February 23rd, 2010.

18- Malavosklis Bikram, **Mohamed Ismail Nounou**, Lili Cui, Dana E. Gheorghe, Bernd Lorenz and Christof Karmonik; "Nanomaterials for biomedical applications"; Podium Presentation, Proceedings of ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology (NEMB 2010), Houston, TX, 77030, USA, February 7-10, 2010.

19- Bradley McConnell, **Mohamed Ismail Nounou**, Dongling Li, Guilherme V Silva and Malavosklis Bikram; "Characterization of a Novel Non-Viral Cardiovascular Gene Delivery System for the Treatment of Heart Disease"; Poster Presentation, American Heart Association (AHA) Basic Cardiovascular Science (BCVS) 2010 meeting; Rancho Mirage, CA, July 19-22, 2010.

20- Malavosklis Bikram, **Mohamed Ismail Nounou**, Bradley McConnell and Guilherme V. Silva; "Development of non-viral gene delivery carriers for ischemic heart disease (IHD)"; Poster Presentation, American Heart Association Annual Scientific Sessions, Orlando, FL, November 14-18, 2009.

21- **Mohamed Ismail Nounou**, Vicky Mody, Kalyopy Emmanouil, Thu Pham, Zhuoyuan Lu and Malavosklis Bikram; "Design, synthesis and characterization of Novel lysine-Based bio-reducible nonviral gene delivery system"; Poster Presentation, Biomedical Engineering Society Annual Meeting, Pittsburg, PA, 2009.

- 22- Samuel Chung, **Mohamed Ismail Nounou**, Kim Ahnh Pham, Bradley K. McConnell and Bikram Malavosklsh; "Novel Bio reducible Polymeric Gene Delivery System for Ischemic Heart Disease"; Poster Presentation, SURF, Houston, TX, 2009.
- 23- **Mohamed Ismail Nounou**, Vicky Mody, Kalyopy Emmanouil, Thu Pham, Zhuoyuan Lu and Malavosklsh Bikram "Efficient DNA delivery using novel bio reducible linear L-lysine-modified copolymers (LLC)", 14th International Symposium on Recent Advances in Drug Delivery Systems, February 15-18, 2009, Salt Lake City, Utah, USA.
- 24- Ife Bamgbose, Vicky V. Mody, Stephen Potter, Rithu Johnson, **Mohamed Ismail Nounou** and Bikram Malavosklsh; "Synthesis and characterization of a novel biodegradable ovarian cancer targeted MRI contrast agents"; Poster Presentation, SURF, Houston, TX, 2008.
- 25- Stephen Potter, Vicky V. Mody, Ife Bamgbose, Rithu Johnson, **Mohamed Ismail Nounou** and Bikram Malavosklsh; "Novel doped iron oxide MRI contrast agents for the early detection of ovarian cancer."; Poster Presentation, AGEP, Houston, TX, 2008.
- 26- Vicky V. Mody, Kamilia Abdelraouf, **Mohamed Ismail Nounou**, Christof Karmonik and Malavoskilsh Bikram; "Synthesis and characterization of bioresponsive ultrasmall paramagnetic ironoxide nanoparticles as MR contrast agents"; Selected for Podium Presentation at 25th Annual Meeting of HSEMB, Houston, TX, 2008.
- 27- Malavosklsh Bikram, Vicky V. Mody, **Mohamed Ismail Nounou** and Christof Karmonik; "Tumor-specific MRI Contrast Agents for Ovarian Cancer"; Poster Presentation, Drug Carriers In Medicine & Biology (Gordon Research Conference), Big Sky, MT, August 24-29, 2008.
- 28- Vicky V. Mody, **Mohamed Ismail Nounou**, Christof Karmonik and Malavosklsh Bikram; "Development of Tumor-Targeted MRI Contrast Agents for the Early Detection of Ovarian Cancer"; Poster Presentation 35th Annual Meeting of Controlled Release Society, New York, NY, 2008.
- 29- **Mohamed Ismail Nounou**, El-Kourdagui L., Khallafallah, N and Khalil, S.; "Liposomal 5-fluorouracil for topical drug delivery"; Conference Proceeding (Poster Presentation); International Pharmaceutical Federation (FIP); Cairo; 3-8 September 2005.
- 30- **Mohamed Ismail Nounou**, El-Kourdagui L., Khallafallah, N and Khalil, S.; "Development and validation of a drug release rate technique for hydrophilic and hydrophobic drug entities in liposomal dispersions and gels"; Conference Proceeding (Poster Presentation); International Pharmaceutical Federation (FIP); Cairo; 3-8 September 2005.
- 31- **Mohamed Ismail Nounou**, El-Kourdagui L., Khallafallah, N and Khalil, S.; "Release Stability of 5-fluorouracil liposomal concentrates, gels and lyophilized powder"; Conference Proceeding (Poster Presentation); International Pharmaceutical Federation (FIP); Cairo; 3-8 September 2005.
- 31- **Mohamed Ismail Nounou**, El-Kourdagui L., Khallafallah, N and Khalil, S.; "Liposomal dibucaine delivery system: Development and characterization"; Conference Proceeding (Poster Presentation); International Pharmaceutical Federation (FIP); Cairo; 3-8 September 2005.

C. Oral Presentation

- 1- **Mohamed Ismail Nounou**, Vicky Mody, Kalyopy Emmanouil, Thu Pham, Zhuoyuan Lu and Malavosklsh Bikram, "Synthesis and characterization of novel bio reducible linear disulfide copolymers (LDC) for non-viral gene delivery", 26th Annual Meeting of HSEMB, Houston, TX, 2009.

D. Invited Speaker

- 1- **Mohamed Ismail Nounou**; "Confocal & Fluorescence Microscopy: Old Tips & New Tricks"; Invited speaker, Tissue Engineering & Regenerative Medicine Society, Bimonthly Seminar Series, Faculty of Dentistry, Alexandria University, May 26th 2015.
- 2- **Mohamed Ismail Nounou**; "Blood Brain Barrier: Beyond Targeting"; Invited speaker, Genetic Engineering and Biotechnology Research Institute (GEBRI), Sadat City University, Egypt, February 24th 2015.
- 3- Mohamed Ismail Nounou; "Research ethics and plagiarism"; Invited speaker, Faculty of Pharmacy Annual Research Day", Alexandria University, Alexandria 21521, Egypt, Feb 9th, 2015.
- 4- Mohamed Ismail Nounou; "Drug Delivery 2.0: Essential Experimental Toolbox"; Invited speaker, Electron

Microscopy Applications in Nanotechnology Workshop, Electron Microscopy Unit, Faculty of Science, Alexandria 21521, Egypt, February 1st, 2015.

5- **Mohamed Ismail Nounou**; "Nutraceuticals, Cosmeceuticals adulteration and Counterfeiting: A Middle East toxicity threads spreading worldwide"; Invited speaker, Genetic Engineering and Biotechnology Research Institute (GEBRI), Sadat City University, Egypt, January 5th 2015.

6- **Mohamed Ismail Nounou**; "Smart Gene Carriers: Beyond Phase II Clinical trials"; Invited speaker, IGSR Biotech. Scientific Society (IBSS) Pharmaceutical Biotechnology Conference: "The Revolution of Sciences", Institute of Graduate Studies and Research (IGSR), Alexandria University, Egypt, December 25th 2014.

7- **Mohamed Ismail Nounou**; "Smart targeting of Brain Metastases Version 2.0: Overcoming natural resilient hurdles"; Invited speaker, Invited speaker,

8- **Mohamed Ismail Nounou**; "Research Trends: Medicinal Chemistry, Pharmacology, Pharmacognosy, Engineering and Pharmaceutics and everything in-between!"; Invited speaker, Department of Pharmaceutical and Pharmacological Sciences Monthly Seminar, University of Padua, Italy, October 10th 2014.

9- **Mohamed Ismail Nounou**; "Recoding Life: Animal Models 2.0!"; Invited speaker, Faculty of Pharmacy Scientific & Cultural Sessions, Alexandria University, May 5th, 2014.

10- **Mohamed Ismail Nounou**; "Usage Of BioStats: Are They a Double Edged Sword?"; Invited speaker, Step on the way: Alexandria Scientific Conference 2014, Egyptian Pharmaceutical Student Federation (ESPF), Alexandria, Egypt, March 24-26, 2014.

11- **Mohamed Ismail Nounou**; "Drug delivery system to the CNS: Breaking the barrier"; Invited speaker, 1st Workshop on Molecular Therapeutics, Faculty of Science, Alexandria 21521, Egypt, March 3-6, 2014.

12- **Mohamed Ismail Nounou**; "Drug delivery system to the brain: Cracking the nut"; Invited speaker, Faculty of Pharmacy Annual Research Day", Alexandria University, Alexandria 21521, Egypt, Feb 22nd, 2014.

13- **Mohamed Ismail Nounou**; "Research Misconduct and Plagiarism"; Invited speaker, Faculty of Pharmacy Annual Research Day", Alexandria University, Alexandria 21521, Egypt, Feb 22nd, 2014.

14- **Mohamed Ismail Nounou**; "Novel design approach towards a safe and efficient bio reducible lysine-based non-viral gene delivery system"; Invited speaker, Departmental Monthly Graduate Seminar Series, Department of Pharmacological and Pharmaceutical Sciences, College of Pharmacy, Texas Tech. University, Amarillo TX 79106 Feb. 20th 2013.

15- **Mohamed I. Nounou**, Kalyopy Emmanouil, Samuel Chung, Thu Pham, Zhuoyuan Lu and Malavosklis Bikram; "Lysine based bio reducible non-viral gene delivery systems"; Invited speaker, American Association of Pharmaceutical Scientists National Biotechnology Conference (AAPS NBC), session #36 entitled "Biotechnology Innovations in Gene and Drug Delivery", San Francisco, CA, USA, May 16-19, 2010.

E. Book Chapters

1- **Mohamed Ismail Nounou**, Chris E Adkins, Tori B Terrell, Kaci A Bohn and Paul R Lockman; "Drug Delivery to the CNS: Breaking down the barrier"; in Book "Drug Delivery", edited by Ashim K Mitra, Jones & Bartlett Learning, ISBN-10: 1284025683, ISBN-13: 978-1284025682, 2014.

IX. GRANTS

1- **Mohamed Ismail Nounou**, Kamilia Abdelraouf, Maha Nasra, Dalia Hamdy, Ahmed El-Yazbi, Amr El-Hawiet, Layla Younis, and Amal El-Kamel; "Setting up a Cell Culture Laboratory For Alexandria University Medical Center"; Alexandria University Research Fund (AURF), Research Enhancement Program (Alex Rep), 2013-2014 round, Accepted.

2- **Mohamed Ismail Nounou**, "Cracking the obesity crisis via novel pharmaceuticals and integrated clinical nutrition system exploiting software and hardware mobile technologies", SmartCi Center of Research Excellence with VT-MENA (Virginia Tech- Middle East and North Africa), Alexandria University, 2015, Accepted.

X. Graduate Students

Student Name	Degree	Thesis Title	Starting date
Ghada El-Haddad	M.PSc.	Characterization of the pharmaceutical and pharmacological properties of the over-the-counter (OTC) and teleadvertized impotency pills in the Egyptian market	Fall 2013- Fall 2015 (Graduated)
Nehal Khaled	M.Sc.	A study of the effect of recombinant <i>Bacillus subtilis</i> alkaline protease enzyme on skin permeability	
Salma Soudi		Development of a nano-carrier for brain drug delivery.	Spring 2014
Dalia Alian		Development of a drug delivery system to the central nervous system.	
Ahmed Ragab	M.PSc.	Novel biodegradable stents for vascular disorders.	
Nada Helal		Pharmaceutical evaluation of some over-the-counter (OTC) weight loss products available in the Egyptian market	
Ola Yousri		Formulation and characterization of nanocarrier system(s) for brain delivery	
Marwa ElSayed		Development, characterization and evaluation of some pediatric pharmaceutical formulations	Fall 2015
Ibrahim ElSayed		Effect of raw material variability on the quality of some modified-release tablets	
Rehab Naiem	M.Sc.	The dehiring effect of alkaline protease enzyme derived from recombinant <i>Bacillus subtilis</i> cells	
Haidy Haggag	M.A.	The use of information services through smart phones and tablets by the students of the public and private universities in Alexandria: A comparative field study	Fall 2015
Bassant Abo-Talab	Ph.D.	A Pharmaceutical and Biopharmaceutical Study of Multisource Brand Products of narrow therapeutic index drugs.	Fall 2013

XI. REFERENCES

A. Professional Peer References

- **Professor Paul Lockman**, Chair for Basic Pharmaceutical Sciences, Department of Basic Pharmaceutical Sciences, West Virginia University, P.O. Box 9530, Morgantown, WV-9530, USA. (prlockman@hsc.wvu.edu)
- **Professor Vishnu Gupta**, Department of Pharmacological and Pharmaceutical Sciences, College of Pharmacy, University of Houston, Houston, TX, 77030, USA. (vgupta@uh.edu)
- **Professor Paolo Caliceti**, Department of Pharmaceutical and Pharmacological Sciences (DSF), Università degli Studi de Padova, Italy (paolo.caliceti@unipd.it)
- **Professor Stefano Salmaso**, Department of Pharmaceutical and Pharmacological Sciences (DSF), Università degli Studi de Padova, Italy (stefano.salmaso@unipd.it)
- **Professor Nawal Khallafallah**, Department of Pharmaceutics, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (nawalkhalaf@dataxprs.com.eg)
- **Professor Michael L. Johnson**, Department of Pharmaceutical Health Outcomes and Policy, College of Pharmacy, University of Houston, Houston, TX, 77030, USA. (MikeJohnson@uh.edu)

- **Assistant Professor Vicky Mody**, Department of Pharmaceutical Sciences, South University, Savannah, GA 31406, USA. (vmody@southuniversity.edu)
- **Professor Labiba K. El-Khordagui**, Department of Pharmaceutics, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (lakhail@gmail.com)
- **Professor Evan Saad Ibrahim**, Dean, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (eisaad@yahoo.com)

B. Graduate Students References

- **Amira Bashir M.PSc.**, Department of Pharmaceutics, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (amirabashr@gmail.com)
- **Haidy Haggag**, Department of Library and Information Science, Faculty of Arts, Alexandria University, Alexandria, Egypt. (haidy.haggag@alexu.edu.eg)
- **Ghada El-Haddad M.PSc.**, Department of Pharmaceutics, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (ghadaelhadad2014@gmail.com)
- **Nada Helal**, Department of Pharmaceutics, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (nada.helal@alexu.edu.eg)
- **Ola Youstri**, Department of Pharmaceutics, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (olayousri@gmail.com, ola.elnoweam@alexu.edu.eg)
- **Dalia Alian**, Biotechnology Department, Institute of Graduate Studies and Research, Alexandria University, Alexandria, Egypt. (daliaalian@yahoo.com)

C. Undergraduate Students References

- **Kalyopy Emmanouil**, School of Dentistry, The University of Texas Health Science Center at Houston, Houston, TX, USA. (k_emmanouil@yahoo.com)
 - **Hassnaa El-Zahar**, Fifth year clinical pharmacy student, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (hassnaa910026@pharmacy.alexu.edu.eg)
 - **Arwa Nemir**, Fifth year clinical pharmacy student, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (arwa_taher91@hotmail.com)
 - **Amr Othman**, Fifth year clinical pharmacy student, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (amrsolayman@gmail.com)
 - **Sameer Saifuddin**, School of Pharmacy, Texas Tech. University Amarillo, TX, USA. (sameer0890@gmail.com)
 - **Fatema ElAmrawey**, Fifth year clinical pharmacy student, Faculty of Pharmacy, Alexandria University, Alexandria 21521, Egypt. (fatema.el.amrawy@gmail.com, fatema.elamrawy@alexu.edu.eg)
-