CURRICULUM VITAE

Carlos Antonio Molina-Nazario

Montclair State University
Department of Biology
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Montclair, New Jersey 07043
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EDUCATION:

Undergraduate

1981-1985 B.S. (*Magna cum Laude*)
Biology Department, School of Science
University of Puerto Rico, Rio Piedras
Puerto Rico
Major: Biology
Minor: Chemistry

Graduate and Professional

1986-1989 M.S. (Advisor, Curtis Ashendel)
Medicinal Chemistry Dept., School of Pharmacy
Purdue University, West Lafayette, Indiana
Major: Medicinal Chemistry
Minor: Cancer Biology

1989-1991 Ph.D. (Advisor, Curtis Ashendel)
Medicinal Chemistry Dept., School of Pharmacy
Purdue University, West Lafayette, Indiana
Major: Biochemistry
Minor: Cancer Biology

Postdoctoral Training

1992-1994 Post-Doctoral Fellow with Dr. Paolo Sassone-Corsi
CNRS-LGME, Institut De Chimie Biologique
Faculté De Medicine, University Louis Pasteur, Strasbourg, France
The Role of cyclicAMP Responsive Element Modulator (CREM) in the process of signal transduction.

UNIVERSITY APPOINTMENTS:

1994-1996 Assistant Professor (Co-Terminus)
Department of Obstetrics and Gynecology
UMDNJ-New Jersey Medical School, Newark NJ

1996-2007 Assistant Professor

	Department of Obstetrics, Gynecology and Women's Health UMDNJ-New Jersey Medical School, Newark NJ
1998-2007	Assistant Professor Department of Biochemistry and Molecular Biology UMDNJ-New Jersey Medical School, Newark NJ
2007-2017	Associate Professor (tenure) Department of Biology and Molecular Biology Montclair State University, Montclair NJ
2011-present	Doctoral faculty, Montclair State University, Environmental Science and Management PhD program
2017-present	Full Professor (tenure) Department of Biology Montclair State University, Montclair NJ
2020-present	Adjunct Professor, Rutgers-NJ Medical School, Department of Cell Biology and Molecular Medicine, Newark, NJ.

OTHER PROFESSIONAL POSITIONS AND MAJOR VISITING APPOINTMENTS:

2013-2015	Director of the National Science Foundation-Funded, Louis Stokes Alliances for Minority Participation (LSAMP) program at MSU.
2000-2007	Founder and Director of the Transgenic Mouse Facility UMDNJ-New Jersey Medical School, Newark NJ
Spring 2019	Sabbatical leave, Japan. Worked with: Drs. Koichi Kawakami and Noriyoshi Saka at the National Institute of Genetics (NIG), Mishima; Dr. Takashi Yoshimura at the Institute of Transformative Bio-Molecules (ITbM) at Nagoya University; and Dr. Kiyoshi Naruse at the National Institute of Basic Biology (NIBB), Okasaki.

AWARDS AND HONORS:

1983-85	NIH-MARC Honor Undergraduate Research Fellowship
1984	MARC Summer Research Internship
1985	Magna Cum Laude, University of Puerto Rico
1986-90	National Institutes of Health-MARC Pre-Doctoral Fellowship
1990	American Association for Cancer Research Travel Award
1990-91	NIH Training Grant in Drug and Carcinogen-DNA Interaction
1992-93	Ambassade de France Chateaubriand Fellowship, France
1993	American Association for Cancer Research Travel Award
1993-94	National Science Foundation International Research Fellowship
1994	French Foundation for Medical Research Postdoctoral Fellowship
1994	American Association for Cancer Research Travel Award
1999	AACR Minority Scholar Award in Cancer Research
2000	The Cancer Institute of New Jersey Gallo Award
2001,02	AACR Minority Scholar Award in Cancer Research
2016	Faculty Service Award, College of Science and Mathematics, MSU

MAJOR COMMITTEE ASSIGNMENTS:

National and Regional

2002, 03, 04, 05, 06 Member, Department of Defense, U.S. ARMY Medical Research and Materiel Command, Ovarian Cancer Research Program Study Section.

2004 Member, Minorities in Cancer Research Symposia Committee for the 95th annual meeting of the American Association for Cancer Research.

2005, 2006 Member, Department of Defense, U.S. ARMY Medical Research and Materiel Command, Prostate Cancer Research Program Study Section.

2005 Member, National Heart, Lung and Blood Institute, National Institute of Health, Study Section member.

2006 Member, NIH, National Institute of Aging, Study Section member.

2012 Reviewer for the Research and Development Council of New Jersey.

2014 Member, Puerto Rico Science, Technology and Research Trust.

UMDNJ-New Jersey Medical School

1997-2000, NJMS Faculty Affairs Committee
1998-2004, NJMS Biomedical Research Support Committee
2001-02, NJMS Search Committee for Senior Associate Dean for Research
2001-02, NJMS Search Committee for Chairman of the Department of Cell Biology and Molecular Medicine
2001-2007, NJMS Institutional Biosafety Committee (IBC)
2003 Adhoc Investigator Disclosure Faculty Committee, NJMS
2004-2007, NJMS Institutional Animal Care and Use Committee

Montclair State University

2007 Search Committee for Assistant Professor of Neurobiology for the Department of Biology and Molecular Biology, Montclair State University.
2007 Search Committee for Assistant Professor of Microbiology for the Department of Biology and Molecular Biology, Montclair State University.
2008 CSAM Interdisciplinary Council, Representative for the Department of Biology and Molecular Biology
2008 Steering committee for the 2008 Annual Meeting of The Metropolitan Association of College and University.
2009-2011, research advisor for GK-12 Fellows in the Middle 2009/2010 NSF-founded program.
2009-present, Doctoral Faculty of MSU.
2020-2021 University-wide Sabbatical committee

Editorial Boards

Reviewer for *Molecular and Cellular Biology*
Reviewer for *Fertility and Sterility*

Reviewer for *Molecular Endocrinology*
Reviewer for *Cancer Research*
Reviewer for *Oncogene*
Reviewer for *Cancer Immunology and Immunotherapy*
Reviewer for *International Journal of Gynecology & Obstetrics.*
Reviewer for *Proceeding of the National Academy of Sciences of the United State of America*
Reviewer for *Journal of Environmental Science and Technology*

MEMBERSHIPS, OFFICES, AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES:

The American Society for Cell Biology
The Metropolitan Association of College and University Biologists.

GRANT HISTORY:

UMDNJ-NJMS

Completed:
UMDNJ-Foundation Grant (#37-96)
"Role of cAMP Response Element Modulator in Endocrine Cell Cycle". Amount Funded: $25,000. July 1, 1995 - June 30, 1996. PI

The New Jersey State Commission on Cancer Research Grant Award (796-023) "Transcriptional Repressor ICERIg and Cell Transformation". Amount Funded: $88,000. July 1, 1996 - June 30, 1998. PI

NIH R29 CA69316 "The Role of ICER in Normal and Neoplastic Cell Growth".
Amount Funded: $559,890. July 1, 1996-November 1, 2002. PI

The New Jersey State Commission on Cancer Research (00-67-CCR-S-1) "Regulation of Prostate Cancer Cell Growth by ICER" Amount Funded: $74,071. June 15, 2000 - June 14, 2002. PI

US Department of Defense through The Dean and Betty Gallo Prostate Cancer Foundation, Cancer Institute of New Jersey (DAMD17-01-1-0755) “Regulation of the Putative Tumor Suppressor ICER in Prostate Cancer by PTEN and PI3K Signaling" Amount Funded: $60,000 July 1, 2002-June 30, 2004. PI

UMDNJ-Foundation Grant "Non-mutational Deactivation of ICER in Prostate Cancer" Amount Funded: $17,500. June 1, 2003 - June 30, 2004. PI

The New Jersey State Commission on Cancer Research (03-1096-CCR-E0) "Ras-mediated Degradation of ICER in Melanomas" Amount Funded: $98,865. June 1, 2003 - May 5, 2005. PI

NIH R03HD045503 "Inducible cAMP Early Repressor in Ovarian Function" Amount Funded: $100,000. December 16, 2003 - November 30, 2005. PI

UMDNJ-New Jersey Medical School Cancer Center "A Mouse Model for the Study of Prostate Cancer associated with Testicular Malfunctions." Amount Funded: $50,000. 07/01/06-06/30/07

R01 DK55369 "Placental Glucose Transport in Diabetic Pregnancies" Principal Investigator: Nicholas P. Illsley, D. Phil. Amount Funded: $873,116. July 1, 2000-June 30, 2004. Co-Investigator

R01 CA89868 "Breast Cancer-Bone Marrow Stromal Interactions" Principal Investigator: Pranela Rameshwar, Ph.D. Amount Funded: $873,116. July 1, 2000-June 30, 2004. Co-Investigator

Montclair State University:

National Science Foundation, USA. Award Number (FAIN): 1952513 "IRES Track 1: US-Japan study of novel genetic elements regulating seasonal behavior of medaka fish" September 1, 2020-August 31, 2023. $300,000.

National Institute of Health/National Institute of General Medical Sciences, USA. SC1GM125583 "Post-translational Regulation of Inducible cAMP Early Repressor and its Implications in Cancer" May 1, 2018 – April 30, 2022. $1,297,953.

Shred Out Cancer Foundation. "Role of Inducible cAMP Early Repressor in Cancer". October 2018. $5,000.

Public Service Enterprise Group Institute for Sustainability Studies (Principal Investigator)
"A Quick, Sensitive, and Economical Genomic Diagnostic for the Surveillance of Pharmaceutical and Heavy Metals Contamination." $6,000. Summer 2016

Short-term visit award to Graz University in Austria. "Molecular models to determine how protein modifications affect the structure of transcription factors." 1,360 EUROS. Summer 2015.

U.S. Department of State/Partners of the Americas Foundation (Principal Investigator) "A Reciprocal Approach to Promoting Study Abroad in STEM: Montclair State University, USA and Universidad Mayor Chile" $25,000 (direct funds) July 1, 2014-June 30, 2015

National Science Foundation-Louis Stokes Alliances for Minority Participation (MSU director) The purpose of the LSAMP program is to address the national shortage of STEM-trained professionals by increasing participation among members of underrepresented minority groups. $361,218 (directs funds) September 1, 2014 to August 31, 2019

The Margaret and Herman Sokol Institute for Pharmaceutical Life Sciences "Binding of ICER to its Own Promoter as a Mode of Cooperative Regulation" Dr. Carlos A. Molina, co-Principal investigator with Dr. Hans Schelvis $100,000 September 1, 2008-August 31, 2012.

Sokol Faculty/Student Research Program Award of the College of Science and Mathematics at Montclair State University. "Development of transgenic zebrafish" $1,700 June 1, 2010-June 30, 2011.

Summer Grant Development Award Program of Montclair State University. "Development of transgenic zebrafish" $4,000 June 1, 2010-June 31, 2011.

The Margaret and Herman Sokol Faculty/Student Research Grant Program "Ubiquitination and subcellular localization of ICER" $1,700 July 1, 2011-June 30, 2012.

MAJOR TEACHING EXPERIENCE:

Rutgers-Graduate School of Biomedical Science:
GSBS 5160 Biology of Human Tumors
BIOC 5240 Molecular Biology of the News
PATH 5070 Laboratory Animal Science.
MSBS 5100 Current Molecular Techniques.
BIOC 5170 Analytical Methods in Biochemistry
GSND 520A Molecular and Cellular Biology
BIOC 508A Current Topics in Biochemistry
CELL 5020 Developmental Biology
PHPY 5011 Graduate endocrinology

Montclair State University:
Biology 112 Principles of Biology
Biology 230 Cell and Molecular Biology
Biology 409 Externship Bio Research-COOP ED
Biology 418 Biology Independent Research
Biology 434 Molecular Biology I
Biology 435 Molecular Biology II
Biology 548 Experimental Molecular Biology
Biology 549 Topics in Developmental Biology
Biology 562 Short Topics Molecular Biology
Biology 594 Signal Transduction
Biology 597 Research: Biological Literature
Biology 598 Selective Techniques in Molecular Biology
Biology 599 Introduction to Biological Research
Biology 698 Master's Thesis
ENVR 531 Independent Study:Environmental STDS
ENVR 704 Special Topics
EAES 792 Special Topics

Research Advisor at UMDNJ:

Postdoctoral Fellows:
1) Elisabeth Memin Ph.D., 2000-2006.
2) Ghassan Yehia Ph.D., 1997-2003.
3) Ratnakar V.A.L. Pillarisetty Ph.D., 2001-2003

Doctoral Students:
1) Megan Fredricks, 2000-2004

2) Marlene Healey , 2000-2004
3) Luis Muñiz, 2001-2006 (F31 NIH fellowship)

Master Students:
1) Reza Razavi, 1996-2001
2) Florence Schlotter, 1997-2000
3) Lorraine Ampaw, 2005-2006

Medical Students:
1) Juan Carlos Ramos, 1996-1999 (Bristol-Myers Squibb, Fellowship).
2) Stephen E. Nygård, 1999-2000. (NIH Fellowship)
3) Christian Castillo, 2000-2001 (NIH Fellowship).

Residents (Ob/Gyn)
1) Maria R. Keanchong M.D., 1996
2) Barbara A. Hessel M.D., 1997
3) Barbara Mercado M.D., 1997, 98, 99
4) Diana Scott M.D., 2000-2001
5) Tracy Pipkin, M.D., 2001-2002
6) Dilek Cermik, M.D., 2002-2003
7) Abha Gupta, M.D., 2003-2005
8) Mamta Purohit, M.D., 2005-2007

Research Advisor at Montclair State University:

Thesis Master Students:

1) Goce Bogdanoski, 2007-2008
2) Craig Stephen Queenan, 2007-2008
3) Caitlin M. Ament, 2009-2011 NSF GK-12 Fellow
4) Dipika B. Patel, 2010-2011
5) Marni S. Crow, 2011-2012
6) Theodora Tsatsos, 2012-2013
7) Rohini Rajendran, 2013-2014
8) Riham Makhoul, 2013-2014
9) Fanaye B. Woldeamanuel, 2014-2015
10) Cory Haluska, 2014-2015
11) Joseph Bulatowicz, 2015-present
12) Dina Edani, 2015-2016
13) Christopher Thomas Greig, 2016-2017
14) Paula Hernandez, 2016-2017
15) Manohar Katara, 2017
16) James Reilly, 2017-2018
17) Jena Bedard, 2017-2018
18) Justin Wheelan, 2017-2018
19) Rosalina Caba, 2019-2021
20) Melissa Cabrales, 2019-2021
21) Douglas Job, present-
22) Karem Rivera, present-

23) Abdulkader Hallak, present-

Doctoral Students:

1) Justin Wheelan, 2019-present
2) Angelo Cirinelli, 2020-present

ARTICLES (peer-reviewed):

1. Candelas, G.C., Ortiz, A., and **Molina, C.A.**: The Cylindrical or Tubiliform Glands of Nephila Clavipes. *The Journal of Experimental Zoology* 237, 281-285, (1986).

2. **Molina, C.A.** and Ashendel, C.L.: Tumor Promoter 12-0-Tetradecanoylphorbol-13-Acetate And Sn-1, 2-Dioctanoylglycerol Increase The Phosphorylation of Protein Kinase C In Cells. *Cancer Research* 51, 4624-4630, (1991).

3. **Molina, C.A.**, Foulkes, N.S., Lalli, E., and Sassone-Corsi, P.: Inducibility And Negative Autoregulation of CREM: An Alternative Promoter Directs The Expression of ICER, An Early Response Repressor. *Cell* 75, 875-886, (1993).

4. Stehle, J.H., Foulkes, N.S., **Molina, C.A.**, Simonneaux, V., Pevet, P., and Sassone-Corsi, P.: Adrenergic Signals Direct Rhythmic Expression of Transcriptional Repressor CREM In the Pineal Gland. *Nature* 365, 314-320, (1993).

5. Desdouets, C., Matesic, G., **Molina, C.A.**, Foulkes, N.S., Sassone-Corsi, P., Brechot, C. and Sobczak-Thepot, J. Cell Cycle Regulation of Cyclin A Expression by the Cyclic AMP-Responsive Transcription Factors CREB and CREM. *Mol. Cell. Biol*. 15:3301-3309, (1995).

6. Lamas, M., **Molina, C.A.**, Foulkes, N.S., Jansen, E. and Sassone-Corsi, P. Ectopic ICER Expression in Pituitary Corticotroph AtT20 Cells: Effects on Morphology, Cell Cycle and Hormonal Production. *Mol. Endocrinol.*.11:1425-1434 (1997).

7. Razavi, R., Ramos, J.C., Yehia, G., Schlotter, F. and **Molina, C.A.** ICER-II$_g$ is a Tumor Suppressor that Mediates the Antiproliferative Activity of cAMP. *Oncogene* 17:3015-3019 (1998).

8. Maronde, E., Pfeffer, M., Olcese, J., **Molina, C.A.**, Schlotter, F., Dehghani, Korf, H.W. and Stehle, J.H. Transcription Factors in Neuroendocrine Regulation: Rhythmic Changes in pCREB and ICER Levels Frame Melatonin Synthesis. *J. Neuroscience* 19:3326-3336 (1999).

9. Pfeffer, M., Maronde, E., **Molina, C.A.,** Korf H.W.- and Jörg H. Stehle. Inducible Cyclic AMP Early Repressor Protein in Rat Pinealocytes: A Highly Sensitive Natural Reporter for Regulated Gene Transcription. *Mol. Pharmacology* 56:279-289 (1999).

10. Santiago, F., Clark, E., Chong, S., **Molina, C.A.**, Mozafari, F., Mahieux, R., Fujii, M., Azimi, N., and Kashanchi F. Transcriptional Up-regulation of Cyclin D2 Gene and Acquisition of New CDK Partners in Human T-Cell Leukemia Virus Type 1-Infected Cells. *J. Virology* 73:9917-9927 (1999).

11. Santoro, N., Goldsmith, L.T., Heller, D., Illsley, N., McGovern, P., **Molina, C.A.**, Peters, S., Skurnick, J.H., Forst, C., and Weiss, G. Luteal Progesterone Relates to Histological Endometrial Maturation in Fertile Women. *Journal of Clinical Endocrinology & Metabolism*. 85:4207-4211 (2000).

12. Qian, J., Yehia, G., **Molina C.A**., Fernandes, A., Donnelly, R.J., Anjaria, D.J. Gascon, P., and Rameshwar, P. Cloning of Human Preprotachykin-I Promoter and the Role of Cyclic Adenosine 5'-Monophosphate Response Elements in Its Expression by IL-1 Stem Cell Factor. *J. Immunology* 166:2553-2561 (2001).

13. Yehia, G., Razavi, R., Memin, E., Schlotter, F., and **Molina, C.A.** The Expression of Inducible cAMP Early Repressor (ICER) is Altered in Prostate Cancer Cells and Reverses the Transformed Phenotype of the LNCaP Prostate Tumor cell line. *Cancer Research* 61: 6055-6059 (2001).

14. Yehia, G., Schlotter, F., Razavi, R., Alessandrini, A. and **Molina, C.A.** MAP Kinase Phosphorylates and Targets Inducible cAMP Early Repressor to Ubiquitin-Mediated Destruction. *J. Biol. Chem.* 276: 35272-35279 (2001).

15. Huening, M., Yehia, G., **Molina, C.A**., and Christakos, S. Evidence for a Regulatory Role of Inducible Cyclic Adenosine 3'5'-Monophosphate Early Repressor (ICER) in Protein Kinase A Enhancement of Vitamin D Receptor Expression and Modulation of Hormone Action. Michel Huening, Ghassan Yehia, Carlos A. Molina, and Sylvia Christakos. *Mol. Endocrinol*. 16:2052-2064 (2002).

16. Memin, E., Yehia, G., Razavi, R. and **Molina, C.A.** ICER Reverses Tumorigenesis of Rat Prostate Tumor Cells without Affecting Cell Growth. *Prostate* 53: 225-231 (2002).

17. Nervina, J.M. Tetradis, S., Huang, Y.-F., Harrison D., **Molina, C.A.,** and Kream, B.E. Expression of Inducible cAMP Early repressor is coupled to the cAMP-protein kinase A signaling pathway in osteoblasts. *Bone,* 32: 483-490 (2003).

18. Yamamoto, S., Hong, C., Zablocki, D., Liu, J., Kim, S-J., Soler, S., Yang, G., Yehia, G., **Molina, C.A**., Vatner, S.F., and Sadoshima, J. Activation of Mst1 causes dilated cardiomyopathy by stimulating apoptosis without compensatory ventricular myocyte hypertrophy. *J. Clin Invest*. 111: 1463-1474 (2003).

19. Tomita, H., Nazmy, M., Kajimoto, K., Yehia, G., **Molina, C.A**., and Sadoshima, J., Inducible cAMP early repressor (ICER) is a negative feedback regulator of cardiac hypertrophy and an important mediator of cardiac myocyte apoptosis in response to b-adrenergic receptor stimulation. *Circ Res.* 93:12-22 (2003).

20. Huang, H.F.S., Wang, S., **Molina, C.A**., Ottenweller, J.E. Preservation of spermatogenesis in spinal cord injured rats with exogenous testosterone. Relationship with serum testosterone levels and cellular localization of cAMP responsive element modulator. *Journal of Andrology* 25:95-103, (2004).

21. Kell, C.A., Dehghani, F., Wicht, H., **Molina, C.A**., Korf, H.-W., and Stehle, J.H.

Distribution of transcription factor ICER (Inhibitory cyclicAMP Early Repressor) in rodent brain and pituitary. *Journal of Comparative Neurology* 478:379-394, (2004).

22. Ding, B., Abe, J., Wei, H., Huang, Q., Walsh, R.A., **Molina C.A.**, Zhao, A., Sadoshima , J., Blaxall, B.C., Berk, B.C., and Yan, C. Functional Role of Phosphodiesterase 3 in cardiomyocyte apoptosis Implication in Heart Failure. *Circulation Research* 111:2469-2476 (2005).

23. Ding, B., Abe, J., Wei, H., Che W., Aizawa, T., **Molina C.A.**, Sadoshima , J., Blaxall, B.C., Berk, B.C., and Yan, C. A Positive Feedback Loop of Phosphodiesterase 3 (PDE3) and Inducible cAMP Early Repressor (ICER) Leads to Persistent ICER Induction and Cardiomyocyte Apoptosis. *Proceeding of National Academy of Science* 102:14771-14776 (2005).

24. Muñiz, L. Yehia, G., Mémin, E., Pillarisetty, R., and **Molina, C.A.** Transcriptional Regulation of Cyclin D2 by the PKA Pathway and Inducible cAMP Early Repressor (ICER) in Granulosa Cells. *Biology of Reproduction* 75:279-288 (2006).

25. Yan, C., Ding, B., Shishido, T., Woo, C-H., Itoh, S., Jeon, K-I., Liu, W., Xu, H., McClain, C., **Molina, C.A.,** Blaxall, B.C., Abe J. Activation of ERK5 reduces cardiac apoptosis and dysfunction via inhibition of a PDE3A-ICER feedback loop. *Circulation Research* 100:510-519 (2007).

26. Harzenetter, M.D., Novotny, A.R., Gais, P., **Molina, C.A.,** Altmayr, F., and Holzmann, B. Negative regulation of TLR responses by the neuropeptide CGRP is mediated by the transcriptional repressor ICER. *The Journal of Immunology* 179:607-615 (2007).

27. Corcoran, K.E., Malhotra, A., **Molina, C.A.** and Rameshwar, P. Stromal-derived factor-1α induces a non-canonical pathway to activate endocrine-linked *Tac1* gene in non-tumorigenic breast cells. *Journal of Molecular Endocrinology* 40:113-123 (2008).

28. Shishido, T., Woo, C-H., Ding, B., McClain, C., **Molina, C.A.**, Yan, C., Yang, J., and Abe, J. Effect of MEK5/ERK5 association on Small Ubiquitin-Related Modification of ERK5: Implications for diabetic ventricular dysfunction after myocardial infarction. *Circulation Research* 102:1416-1425 (2008).

29. Woo, C-H., Le, N-T., Shishido, T., Chang, E., Lee, H., Heo, K-S., Mickelsen, D.M., Lu, Y., McClain, C., Spangenberg, T., Yan, C., **Molina, C.A.,** Yang, J., Patterson, C. and Abe, J. Novel role of C terminus of Hsc70-interacting protein (CHIP) ubiquitin ligase on inhibiting cardiac apoptosis and dysfunction *via* regulating ERK5-mediated degradation of inducible cAMP early repressor. *FASEB J.* 24: 4917-4928 (2010).

30. Mémin, E., Genzale, M., Crow, M and **Molina C.A.** Evidence that phosphorylation by the mitotic kinase Cdk1 promotes ICER monoubiquitination and nuclear delocalization. *Experimental Cell Research* 317: 2490-2502 (2011).

31. Le, N-T., Takei, Y., Shishido, T., Woo, C-H., Chang, E., Heo, K-S., Lee, H., Lu, Y., Morrell, C., Oikawa, M., McClain, C., Wang, X., Tournier, C., **Molina, C.A.**, Vorojeikina, D., Cohen, M.S., Serafimova, I.M., Taunton, J., Fujiwara, K., Yan, C., Patterson, C., Yang,

J., and Abe, J. p90RSK targets the ERK5-CHIP ubiquitin E3 ligase activity in diabetic hearts and promotes cardiac apoptosis and dysfunction. *Circulation Research* 110: 536-550 (2012).

32. Healey, M., Crow, M.S., **Molina, C.A.** Ras-induced Melanoma transformation is associated with the proteasomal degradation of the tumor-suppressor ICER. *Molecular Carcinogenesis* 52:692-704 (2013).

33. Muniz, L. and **Molina, C.A.** The transcriptional repressor ICER binds to multiple loci throughout the genome. *Biochemical and Biophysical Research Communications* 478:1462-1465 (2016).

34. Greco, S.J., Yehia, G., Potian, J.A., **Molina, C.A.** and Rameshwar, P. Constitutive Expression of Inducible Cyclic Adenosine Monophosphate Early Repressor (ICER) in Cycling Quiescent Hematopoietic Cells: Implications for Aging Hematopoietic Stem Cells. *Stem Cell Rev.* 13:116-126 (2017).

35. Cirinelli1, A., Wheelan, J., Grieg, C. and Molina. C.A. Evidence that the transcriptional repressor ICER is regulated via the N-end rule for ubiquitination. Experimental Cell Research 414 (2022) 113083 (https://doi.org/10.1016/j.yexcr.2022.113083)

BOOKS, MONOGRAPHS AND CHAPTERS (Authored)

1. Delmas, V., **Molina, C.A.**, Lalli, E., de Groot, R., Foulkes, N.S., Masquilier, D., and Sassone-Corsi, P.: Complexity And Versatility of The Transcription Response To cAMP *Reviews of Physiology, Biochemistry and Pharmacology*, Springer-Verlag 124, 2-28, (1993).

2. Masquilier, D., Laoide, B.M., Delmas, V., de Groot, R., Foulkes, N.S., Benusiglio, E., **Molina, C.A.**, Schlotter, F., and Sassone-Corsi, P.: Transcription Factor CREM: A Key Element of The Nuclear Response To cAMP. *New Development in Lipid-Protein Interactions and Receptor Function*, NATO ASI Series, Eds. K.W.A. Wirtz, L. Packer, J.A. Gustafsson, A.E. Evangelopoulos and J.P. Changeux, Plenum Press 246, 139-152, (1993).

3. Lalli, E., Lee, J.S., Masquilier, D., Schlotter, F., Foulkes, N.S., **Molina, C.A.**, and Sassone-Corsi, P.: Nuclear Response To Cyclic AMP: Central Role of Transcription Factor Cyclic-AMP-Responsive-Element Modulator. *Biochemical Society Transactions* 21, 912-917, (1993).

4. Lee, J.S., Lalli, E., Masquilier, D., Schlotter, F., **Molina, C.A.**, Foulkes, N.S. and Sassone-Corsi, P. CREM. A Master-Switch In The Nuclear Response to cAMP. In: *Inducible Gene Expression*. Ed. P.A. Baeuerle, Birkhauser, Boston 2, 1-38, (1995).

5. **Molina, C.A.** ICER and the nuclear response to cAMP. In: *Cell Death in Reproductive Physiology*. Ed. Springer-Verlag, New York 15, 182-193, (1997).

6. **Molina, C.A.** Inducible cAMP Early Repressor. In: *Encyclopedia of Molecular Medicine,* Thomas E. Creighton (ed), John Wiley & Sons, 3:1739-1741, (2002).

7. Ratnakar,P.V.A.L., Yehia, G., Mémin, E., and **Molina, C.A**. ICER: A putative tumor suppressor. In: Research Advances in Cancer 2002. Global Research Network Publication, INDIA 2, 285-295, (2002).

ABSTRACTS

1. **Molina, C.A.,** Minor, P.L., and Ashendel, C.L Phosphorylation of protein kinase C in cells: occurrence, mechanism and implications for signal transduction. Presented at The American Association for Cancer Research 79th Annual Meeting, New Orleans LA, March 1988. Program Abstract 554.
2. **Molina, C.A.**, and Ashendel, C.L Different effects of phorbol ester and diacylglycerol on the phosphorylation of protein kinase C in cells. . Presented at The American Association for Cancer Research 80th Annual Meeting, San Francisco CA, March 1989. Program Abstract 840.
3. **Molina, C.A.**, Weyman, C.M., and Ashendel, C.L Regulation of protein kinase C via phosphorylation. Presented at The American Association for Cancer Research 81st Annual Meeting, Washington DC, March 1990. Program Abstract 887.
4. **Molina, C.A.**, Weyman, C.M., and Ashendel, C.L The role of activator-dependent autophosphorylation in down-regulation of protein kinase C. Presented at The American Association for Cancer Research 82st Annual Meeting, Houston TX, March 1991. Program Abstract 919.
5. **Molina, C.A.**, Foulkes, N.S., Lalli, E., Delmas, V., and Sassone-Corsi, P. Developmental Switch of CREM Function During Spermatogenesis: From Antagonist to Transcriptional Activator. Presented Keystone Symposia on Molecular and Cellular Biology "Transcriptional Mechanisms", January, 1993. Program Abstract B 954.
6. **Molina, C.A.,** Stehle, J.H., Foulkes, N.S., Simonneaux, V., Pevet, P., and Sassone-Corsi, P. Adrenergic Signals Direct Rhythmic Expression of Transcriptional Repressor CREM In the Pineal Gland. Jacques Monod Conference on Regulation of Gene Expression During Cellular Differentiation, Aussois (France), September, 1993.
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108. Makhoul, R., Rajendran, R. and **Molina, C.A.** Generation and characterization of ovarian specific promoter sequences in Zebrafish (Danio rerio). Eighth Annual Student Research Symposium at Montclair State University. April 12, 2014.

109. Aftab, T., Uddin, S. and **Molina, C.A.** Examining the effects of eating habits on circadian rhythm and body weight: A link between humans and zebra fish. Eighth Annual Student Research Symposium at Montclair State University. April 12, 2014.

110. Woldeamanuel, F.B., Alvarez, C. and **Molina, C.A.** Mapping the ubiquitination sites on the transcriptional repressor ICER. Experimental Biology Conference, April 26-30, 2014 San Diego, CA.

111. Gnanasekar, M., Hasani, A. and **Molina, C.A.** Knock out of Inducible cAMP Early Repressor in zebrafish cell lines through the use of the CRISPR/Cas9 system. Special Meeting of the Federation of American Societies for Experimental Biology on Genome Engineering-Cutting-Edge Research and Applications. Nassau, Bahamas. June 22-27, 2014.

112. Tsatsos, T., Makhoul, R., Rajendran, R. and **Molina, C.A.** Using ovarian-specific transgenic

zebrafish to study the molecular mechanisms of ovulation. Cold Spring Harbor Asia Conferences on Genetics, genomics and Phenomics of Fish. October 20-24, 2014. Suzhou, China.

113. Jumbo, P., Kim, L., Olmos, A., Slebos, S. and **Molina, C.A.** CRISPR/Cas-based Systems and their Potential Applications in Microbiology. Minisymposium for Partners of the Americas Foundation Grant at Universidad Mayor, Santiago de Chile, Center for Genomics and Bioinformatics, January 13, 2015.

114. Ali, B. Vercellino, J., Gomez, M.T. and **Molina, C.A.** Using CRISPR/Cas9 gene editing in Cancer Biology. Minisymposium for Partners of the Americas Foundation Grant at Universidad Mayor, Santiago de Chile, Center for Genomics and Bioinformatics, January 13, 2015.

115. Walker, S. Fuentes, A., Labra, V. and **Molina, C.A.** Can CRISPR/Cas9 gene editing be use for Neurological Conditions? Minisymposium for Partners of the Americas Foundation Grant at Universidad Mayor, Santiago de Chile, Center for Genomics and Bioinformatics, January 13, 2015.

116. Jaronsky, N., Ferrara, N., Villacreses, J. and **Molina, C.A.** Improving plant crops using CRISPR/Cas9 gene editing. Minisymposium for Partners of the Americas Foundation Grant at Universidad Mayor, Santiago de Chile, Center for Genomics and Bioinformatics, January 13, 2015.

117. Young, M. and **Molina, C.A.** CRISPR/Cas System in genome engineering. Nine Annual Student Research Symposium at Montclair State University. April 26, 2015.

118. Vercellino, J., Ali, B., Gomez, M.T., and **Molina, C.A.** The application of the CRISPR/Cas9 system in cancer. Nine Annual Student Research Symposium at Montclair State University. April 26, 2015.

119. Walker, S., Labra, V., Fuentes, A. and **Molina, C.A.** CRISPR-Cas9 in neuroscience. Nine Annual Student Research Symposium at Montclair State University. April 26, 2015.

120. Ferrara, N., Jaronsky, N., Villacreses, J., and **Molina, C.A.** CRISPR/Cas9 plant genome editing. Nine Annual Student Research Symposium at Montclair State University. April 26, 2015.

121. Jumbo, P., Olmos, A., Slevo, S. and **Molina, C.A.** CRISPR-Cas systems and their potential applications in microbiology. Nine Annual Student Research Symposium at Montclair State University. April 26, 2015.

122. Haluska, C and **Molina, C.A.** Utilizing CRISPR-Cas9 gene editing technique to eliminate target sequence from ICER promoter in Zebrafish (Danio rerio). Nine Annual Student Research Symposium at Montclair State University. April 26, 2015.

123. Haluska, C and **Molina, C.A.** Utilizing CRISPR-Cas9 Gene Editing Technique to Eliminate Target Sequence from ICER Promoter in Zebrafish (Danio rerio). 48th Annual meeting of the Metropolitan Association of College and University Biologists. November 7, 2015 Montclair State University.

124. Bulatowicz, J., Edani, D., Nunez, R. **Molina, C.A.** Lysine Knockouts of Inducible cAMP Early Repressor (ICER) are Strongly Localized to the Nucleus of Transfected PAC2 Zebrafish Fibroblasts. 48th Annual meeting of the Metropolitan Association of College and University Biologists. November 7, 2015 Montclair State University. Awarded Best Poster for Master Student.

125. Szpernoga, A. and **Molina, C.A.** Screening transgenic Zebrafish (Danio rerio) expressing EGFP under an ovarian specific promoter. Tenth Annual Student Research Symposium at Montclair State University. April 15, 2016.

126. Edani, D. and **Molina, C.A.** Functional Consequences of ICER Ubiquitination. Tenth Annual Student Research Symposium at Montclair State University. April 15, 2016.

127. Haluska, C., Gnanasekar, M., Hasani, A., and **Molina, C.A.** Employing the CRISPR/Cas9 system to delete Inducible cAMP Early Repressor using an isoforms-specific approach. Keystone Symposia on Precision Genome Engineering. Breckenridge, Colorado, January 8-12, 2017.

128. Grieg, C and **Molina, C.A.** Identifying the exact ubiquitination site of ICER in melanoma cells. First Annual Wehner Research Symposium at Montclair State University. February 10, 2017.

129. Hernandez, P., Grinberg, M., and **Molina, C.A.** Characterization of ovarian specific promoter sequences of a transgenic zebrafish. First Annual Wehner Research Symposium at Montclair State University. February 10, 2017.

130. Grieg, C and **Molina, C.A.** Identifying the exact ubiquitination site of ICER in melanoma cells. Eleventh Annual Student Research Symposium at Montclair State University. April 28, 2017.

131. Grinberg, M., Hernandez, P. and **Molina, C.A.** Zebrafish as a Model Organism for Ovarian Specific Expression of Transgenes. Eleventh Annual Student Research Symposium at Montclair State University. April 28, 2017.

132. Cirinelli, A. and **Molina, C.A.** ICER Knockout. Eleventh Annual Student Research Symposium at Montclair State University. April 28, 2017.

133. Grinberg, M., Hernandez, P. and **Molina, C.A.** Zebrafish as a Model Organism for Ovarian Specific Expression of Transgenes. Endocrine Society Annual Meeting, March 17, 2018. Poster #: SAT-240.

134. Grinberg, M., Hernandez, P. and **Molina, C.A.** Zebrafish as a Model Organism for Ovarian Specific Expression of Transgenes. Eleventh Annual Student Research Symposium at Montclair State University. April 27, 2018.

135. Cirinelli, A., Lange K., and **Molina, C.A.** Transmembrane Transport of an Inducible cAMP Early Repressor and E6apbd Chimera as a Possible Treatment for Cancers. Keystone Symposia on Delivering Therapeutics Across Biological Barriers (E1) May 6-9, 2019. Royal Dublin Society, Dublin, Ireland.

136. **Molina, C.A.**, Spigelman, M, Reilly,J., Cirinelli, A., and Wheelan, J. Is ICER, a protein with antitumor functions, paradoxically eliciting refractory tumors? Cell Symposia (Online). November 8-10, 2021. P2.01.

INVITED SPEAKER:

1. April 1994, Hinterzartener Kreis für Krebsforschung, Starzach, Germany.
2. May 1995, University of Connecticut, Department of Pharmacy, Storr, CT.
3. September 1995, Purdue University, Biochemistry and Molecular Biology Program, West Lafayette, IN.
4. April 1996, Serono International Meeting on "Cell Death in Reproductive Physiology", Chicago IL.
5. June 1996, University of Colorado, Cancer Center, Denver, CO.
6. February 1997, New Jersey Medical School, Department of Biochemistry and Molecular Biology, Newark, NJ.
7. September 1997, New Jersey Medical School, Department of Microbiology and Genetics, Newark, NJ.
8. March 1998, Hunter College, Department of Biological Sciences, NY, NY.
9. April 1999, University of Puerto Rico Medical School, Departments of Biochemistry, Physiology, Pharmacology, and the MBRS Program, San Juan, PR.
10. May 1999, Veterans Administration Medical Center, East Orange, NJ.
11. July 1999, Summer Research Program, Purdue University West Lafayette, IN.
12. July 1999, Summer Research Program, NJMS.
13. July 2000, invited speaker, Summer Research Program, NJMS.
14. December 2000, New Jersey Medical School, Department of Surgery Newark, NJ.
15. February 2001, Cancer Institute of New Jersey, New Brunswick, NJ.
16. February 2001, University of Puerto Rico, Department of Biology, Rio Piedras, PR.

17. March 2001, University of Puerto Rico, School of Sciences, Cayey, PR.
18. December 2001, GPCC Scientific Retreat, Piscataway, NJ
19. September 2001, University of Puerto Rico, School of Sciences, Cayey, PR.
20. March 2002, University of Puerto Rico, School of Sciences, Cayey, PR.
21. May 2002, Indiana University School of Medicine Cancer Center, Indianapolis IN
22. May 2002, Purdue University Cancer Center, West Lafayette, IN.
23. October 2002, University of Puerto Rico, School of Sciences, Cayey, PR.
24. March 2003, University of Puerto Rico, School of Sciences, Cayey, PR.
25. March 2003, University of Minnesota Cancer Center, Minneapolis MN,
26. April 2004, University of Puerto Rico, School of Sciences, Cayey, PR.
27. April 2005, University of Puerto Rico, School of Sciences, Cayey, PR.
28. May 2005, New Jersey Commission for Cancer Research Annual meeting, Session Chair, UMDNJ-Piscataway, NJ.
29. April 2006, Workshop at University of Puerto Rico, School of Sciences, Cayey, PR.
30. May 2006, New Jersey Commission for Cancer Research Annual meeting, Session Chair, UMDNJ-Piscataway, NJ.
31. April 2009, invited speaker. Department of Biology, Saint Peter's College, Jersey City, NJ.
32. March 11, 2010, invited speaker. Department of Biology, Essex County College, Newark, NJ.
33. March 13, 2010, invited lecturer. Teachers As Scholars Program of Montclair State University.
34. June 4, 2010, invited speaker. GK-12 STEM Math and Science Day, Montclair State University.
35. August 15-20, 2010 invited speaker for a Gordon Conference on "Reproductive Tract Biology".
36. March 3, 2011 invited speaker for The Department of Biology and Molecular Biology Seminar Series at Montclair State University.
37. March 4, 2011 invited speaker for The Department of Pharmacology and Toxicology Seminar Series at The University of Connecticut.
38. April 5, 2011 invited speaker for Sokol Institute for Pharmaceutical Life Sciences Research Symposium. Montclair State University.
39. May 6, 2011, invited lecturer. Teachers As Scholars Program of Montclair State University.
40. May 7, 2011 invited speaker and workshop director, Weston Science Prep Day. Montclair State University.
41. June 3, 2011 invited speaker. GK-12 STEM Math and Science Day, Montclair State University.
42. July 20, 2011 invited speaker. Biology and Cell Biology Molecular Biology Programmes, The Chinese University of Hong Kong.
43. February 22, 2012. Department of Biological Sciences, Seton Hall University, South Orange, NJ.
44. November 1, 2012 invited speaker. Department of Biology, Saint Peter's College, Jersey City, NJ.
45. December 11, 2012 invited speaker, MSU Sustainability Series Earth and Environmental Studies, CSAM.
46. October 16, 2014, invited speaker. University of Macau, China. Faculty of Health Sciences.
47. January 6, 2015, invited speaker. Universidad Mayor, Santiago de Chile, Center for Genomics and Bioinformatics.
48. March 10, 2015, invited speaker. Institute of Molecular Biosciences, University of Graz, Austria.
49. September 16, 2015, invited speaker. The Center for Quantitative Obesity Research. Montclair State University.

50. October 23, 2015, invited speaker. Dunworkin Club. Montclair, NJ.
51. February 16, 2016, invited speaker. The MSU Sustainability Seminar Series.
52. April 4, 2016, invited speaker. βββ Xi Honor Society, New Jersey City University.
53. January 30, 2020, invited speaker. Department of Cell Biology and Molecular Medicine, Rutgers Medical School, Newark NJ.