

Andrea Ventura, MD/PhD

Assistant Member
Cancer Biology and Genetics Program
Memorial Sloan Kettering Cancer Center
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Education

- 1991-1997 **Medical Degree.**
Catholic University Medical School, Rome, Italy.
M.D. awarded on July 1997 with distinction *summa cum laude*.
Thesis: Cloning and characterization of alternative isoforms of the *Mlh1* and *Msh2* genes.
- 1995 **Visiting Student**
University of California, San Diego, USA
Laboratory of Prof. Richard Boland
- 1998 **Internship and Medical Board Certification**
- 1999-2003 **PhD in molecular and cellular biology**
Open University, London, UK.
European Institute of Oncology, Milan, Italy
Supervisor: Prof. Pier Giuseppe Pelicci
External supervisor: Dr. Doreen Cantrell
Thesis: Regulation of Shc expression and localization.

Positions and Employment

- 2008-present **Assistant Member**
Memorial Sloan Kettering Cancer Center
Dept. of Cancer Biology and Genetics
- 2003- 2008 **Postdoctoral training**
MIT Center for Cancer Research, Cambridge, MA
Laboratory of Prof. Tyler Jacks
- 1998-1999 **Part-time research work.**
Istituto Mario Negri Sud, Chieti, Italy
Laboratory of Dr. Arturo Sala.
Project: Identification of *B-Myb* targets.

Awards and Honors

- 2009 Sidney Kimmel Scholar Award
- 2008-2013 Geoffrey Beene Junior Investigator Chair
- 2007 Forbeck Scholar Award
- 2004-5 Postdoctoral Fellowship American Italian Cancer Research Foundation
- 2000-2 Research fellowship from Italian Association for Cancer Research
- 1995 Best student award. Catholic University Medical School, Rome.

Teaching Experience

2010–present	Cancer Genetic Lecture for the Molecular Genetics Course at WCMS
2013	GSK Core Course: Methods of experimental perturbation of gene expression and function in culture.
2005	Undergraduate course on RNAi at the Massachusetts Institute of Technology

Presentations (limited to the period 2010–2013)

2013	International Annual Meeting of Cochin Institute. Paris, France. Invited Speaker.
2013	STARR Symposium. CSHL. Platform presentation.
2013	Genentech, San Francisco. Invited Speaker.
2013	BRIC Institute. Copenhagen, Denmark. Invited Speaker.
2013	Italian Institute of Technology. Milan. Italy. Invited Speaker.
2013	AEGH Annual Meeting. Madrid, Spain. Invited Speaker.
2013	AACR Annual Meeting. Washington. Invited Speaker.
2013	Keystone Symposium “non-coding RNAs and cancer”. Vancouver, Canada. Invited Speaker.
2012	Annual Meeting of the American Society of Human Genetics. San Francisco. Invited Speaker.
2012	Rutgers University. Seminar.
2012	New York University Medical School. Seminar.
2012	Albert Einstein University. Seminar.
2012	UNJMS Seminar speaker.
2011	Dana Farber Cancer Institute, Seminars in Oncology. Invited speaker.
2011	OTS meeting, Copenhagen, Denmark. Invited Speaker.
2011	Leuven University. Belgium. Invited Speaker.
2011	Life Science Symposium. Lausanne, Switzerland. Invited Speaker.
2011	XXI Nikolas Symposium. Greece. Invited Speaker.
2011	2 nd mid-Atlantic MicroRNA Mini-Symposium. Philadelphia. Invited speaker.
2011	Keystone Symposium on non-coding RNAs and Cancer, Banff, Canada. Invited Speaker.
2011	Mount Sinai Medical School. Invited Speaker.
2010	Yonsei University, Seoul, South Korea. Invited Speaker.
2010	Forbeck Scholar Retreat. Speaker.
2010	Carnegie Institution. Invited seminar speaker.
2010	NRCI, Liverpool Cancer Meeting. Invited Speaker.
2010	MicroRNAs and Cancer Symposium, Seoul, South Korea. Invited Speaker.
2010	CSHL Mechanism and Models of Cancer. Invited Speaker.
2010	American Association for Cancer Research Meeting. Washington DC. Invited Speaker.
2010	University of North Carolina. Non-coding RNAs Symposium. Invited Speaker.
2010	MicroRNAs and human diseases. Saint Kitts. Invited Speaker.
2010	University College of London. microRNAs and Cancer. Invited Speaker.

Other Experiences and Professional Memberships

2013	NIH/NIEHS ES12-006 (R21) and ES12-007(R01). Study Section Member.
2011	American Cancer Society. Grants and fellowship reviewer.
2010	NCI/NIH Molecular Oncology PO1 Study Section. Ad hoc member.
2009	NCI/NIH Molecular Oncology PO1 Study Section. Ad hoc member.

Publications (Published and in press)

- 1 Han, Y. C. & **Ventura**, A. Control of T(FH) differentiation by a microRNA cluster. *Nature immunology* 14, 770-771, doi:10.1038/ni.2671 (2013).
- 2 Vidigal, J. A. & **Ventura**, A. Embryonic stem cell miRNAs and their roles in development and disease. *Seminars in cancer biology* 22, 428-436, doi:10.1016/j.semcancer.2012.04.009 (2012).
- 3 Concepcion, C. P., Han, Y. C., Mu, P., Bonetti, C., Yao, E., D'Andrea, A., Vidigal, J. A., Maughan, W. P., Ogdowski, P. & **Ventura**, A. Intact p53-dependent responses in miR-34-deficient mice. *PLoS genetics* 8, e1002797, doi:10.1371/journal.pgen.1002797 (2012).
- 4 Concepcion, C. P., Bonetti, C. & **Ventura**, A. The microRNA-17-92 family of microRNA clusters in development and disease. *Cancer journal* 18, 262-267, doi:10.1097/PPO.0b013e318258b60a (2012).
- 5 Yao, E. & **Ventura**, A. A new role for miR-182 in DNA repair. *Mol Cell* 41, 135-137, doi:10.1016/j.molcel.2011.01.005 (2011).
- 6 Yang, J. S., Phillips, M. D., Betel, D., Mu, P., **Ventura**, A., Siepel, A. C., Chen, K. C. & Lai, E. C. Widespread regulatory activity of vertebrate microRNA* species. *RNA* 17, 312-326, doi:10.1261/rna.2537911 (2011).
- 7 Sage, J. & **Ventura**, A. miR than meets the eye. *Genes Dev* 25, 1663-1667, doi:10.1101/gad.17454011 (2011).
- 8 Lal, A., Thomas, M. P., Altschuler, G., Navarro, F., O'Day, E., Li, X. L., Concepcion, C., Han, Y. C., Thiery, J., Rajani, D. K., Deutsch, A., Hofmann, O., **Ventura**, A., Hide, W. & Lieberman, J. Capture of microRNA-bound mRNAs identifies the tumor suppressor miR-34a as a regulator of growth factor signaling. *PLoS genetics* 7, e1002363, doi:10.1371/journal.pgen.1002363 (2011).
- 9 de Pontual, L., Yao, E., Callier, P., Faivre, L., Drouin, V., Cariou, S., Van Haeringen, A., Genevieve, D., Goldenberg, A., Oufadem, M., Manouvrier, S., Munnich, A., Vidigal, J. A., Vekemans, M., Lyonnet, S., Henrion-Caupe, A., **Ventura**, A*. & Amiel, J.* Germline deletion of the miR-17 approximately 92 cluster causes skeletal and growth defects in humans. *Nat Genet* 43, 1026-1030, doi:10.1038/ng.915 (2011). (* corresponding authors)
- 10 Agostini, M., Tucci, P., Steinert, J. R., Shalom-Feuerstein, R., Rouleau, M., Aberdam, D., Forsythe, I. D., Young, K. W., **Ventura**, A., Concepcion, C. P., Han, Y. C., Candi, E., Knight, R. A., Mak, T. W. & Melino, G. microRNA-34a regulates neurite outgrowth, spinal morphology, and function. *Proc Natl Acad Sci U S A* 108, 21099-21104, doi:10.1073/pnas.1112063108 (2011).
- 11 **Ventura**, A. & Jacks, T. MicroRNAs and cancer: short RNAs go a long way. *Cell* 136, 586-591, doi:10.1016/j.cell.2009.02.005 (2009).
- 12 Mu, P.*, Han, Y. C.*, Betel, D., Yao, E., Squatrito, M., Ogdowski, P., de Stanchina, E., D'Andrea, A., Sander, C. & **Ventura**, A. Genetic dissection of the miR-17~92 cluster of microRNAs in Myc-induced B-cell lymphomas. *Genes Dev* 23, 2806-2811, doi:10.1101/gad.1872909 (2009). (*equally contributing authors)
- 13 **Ventura**, A., Young, A. G., Winslow, M. M., Lintault, L., Meissner, A., Erkeland, S. J., Newman, J., Bronson, R. T., Crowley, D., Stone, J. R., Jaenisch, R., Sharp, P. A. & Jacks, T. Targeted deletion reveals essential and overlapping functions of the miR-17 through 92 family of miRNA clusters. *Cell* 132, 875-886, doi:10.1016/j.cell.2008.02.019 (2008).
- 14 **Ventura**, A.*, Kirsch, D.* G., McLaughlin, M. E., Tuveson, D. A., Grimm, J., Lintault, L., Newman, J., Reczek, E. E., Weissleder, R. & Jacks, T. Restoration of p53 function leads to tumour regression in vivo. *Nature* 445, 661-665, doi:10.1038/nature05541 (2007). (* Equally contributing authors)
- 15 Pezzicoli, A., Ulivieri, C., Capitani, N., **Ventura**, A., Pelicci, P. & Baldari, C. T. Expression in T-cells of the proapoptotic protein p66SHC is controlled by promoter demethylation. *Biochem Biophys Res Commun* 349, 322-328, doi:10.1016/j.bbrc.2006.08.039 (2006).

- 16 Sandy, P., **Ventura**, A. & Jacks, T. Mammalian RNAi: a practical guide. *Biotechniques* 39, 215-224 (2005).
- 17 **Ventura**, A*, Meissner, A*, Dillon, C. P., McManus, M., Sharp, P. A., Van Parijs, L., Jaenisch, R. & Jacks, T. Cre-lox-regulated conditional RNA interference from transgenes. *Proc Natl Acad Sci U S A* 101, 10380-10385, doi:10.1073/pnas.0403954101 (2004). (Equally contributing authors)
- 18 **Ventura**, A., Maccarana, M., Raker, V. A. & Pelicci, P. G. A cryptic targeting signal induces isoform-specific localization of p46Shc to mitochondria. *J Biol Chem* 279, 2299-2306, doi:10.1074/jbc.M307655200 (2004).
- 19 Pacini, S., Pellegrini, M., Migliaccio, E., Patrussi, L., Ulivieri, C., **Ventura**, A., Carraro, F., Naldini, A., Lanfranccone, L., Pelicci, P. & Baldari, C. T. p66SHC promotes apoptosis and antagonizes mitogenic signaling in T cells. *Mol Cell Biol* 24, 1747-1757 (2004).
- 20 Mandala, M., Curigliano, G., Bucciarelli, P., Ferretti, G., Mannucci, P. M., Colleoni, M., **Ventura**, A., Peruzzotti, G., Severi, G., Pelicci, P. G., Biffi, R., Orsi, F., Cinieri, S. & Goldhirsch, A. Factor V Leiden and G20210A prothrombin mutation and the risk of subclavian vein thrombosis in patients with breast cancer and a central venous catheter. *Ann Oncol* 15, 590-593 (2004).
- 21 **Ventura**, A. & Pelicci, P. G. Semaphorins: green light for redox signaling? *Science's STKE : signal transduction knowledge environment* 2002, pe44, doi:10.1126/stke.2002.155.pe44 (2002).
- 22 **Ventura**, A., Luzi, L., Pacini, S., Baldari, C. T. & Pelicci, P. G. The p66Shc longevity gene is silenced through epigenetic modifications of an alternative promoter. *J Biol Chem* 277, 22370-22376, doi:10.1074/jbc.M200280200 (2002).
- 23 Trinei, M., Giorgio, M., Cicalese, A., Barozzi, S., **Ventura**, A., Migliaccio, E., Milia, E., Padura, I. M., Raker, V. A., Maccarana, M., Petronilli, V., Minucci, S., Bernardi, P., Lanfranccone, L. & Pelicci, P. G. A p53-p66Shc signalling pathway controls intracellular redox status, levels of oxidation-damaged DNA and oxidative stress-induced apoptosis. *Oncogene* 21, 3872-3878, doi:10.1038/sj.onc.1205513 (2002).
- 24 Cervellera, M., Raschella, G., Santilli, G., Tanno, B., **Ventura**, A., Mancini, C., Seignani, C., Calabretta, B. & Sala, A. Direct transactivation of the anti-apoptotic gene apolipoprotein J (clusterin) by B-MYB. *J Biol Chem* 275, 21055-21060, doi:10.1074/jbc.M002055200 (2000).
- 25 Genuardi, M., Viel, A., Bonora, D., Capozzi, E., Bellacosa, A., Leonardi, F., Valle, R., **Ventura**, A., Pedroni, M., Boiocchi, M. & Neri, G. Characterization of MLH1 and MSH2 alternative splicing and its relevance to molecular testing of colorectal cancer susceptibility. *Human genetics* 102, 15-20 (1998).

Books and Chapters

1. **Ventura**, A., Kumar, M. S. & Jacks, T. 24 Roles of microRNAs in cancer and development. *MicroRNAs: from basic science to disease biology*, 322 (2008).