

# Molecular Medicine

## Editors-in-Chief

Kevin J Tracey, MD  
The Feinstein Institute for Medical Research  
Manhasset, NY, USA

Anthony Cerami, PhD  
Kenneth S Warren Laboratories  
Tarrytown, NY, USA

## Editorial Staff

Christopher J Czura  
Managing Editor  
The Feinstein Institute for Medical Research  
Manhasset, NY, USA

Margot Gallowitsch-Puerta  
Associate Editor  
The Feinstein Institute for Medical Research  
Manhasset, NY, USA

## *Mollie Medcast*

Episode 11 Transcript: SLE and RA, Preeclampsia, Osteosarcoma

Hello and thanks for downloading us! It is my pleasure to welcome you back to “Mollie Medcast,” the podcast for the biomedical journal, *Molecular Medicine*. My name is Margot Gallowitsch-Puerta, I’m the host for your podcast episode. I’m the Associate Editor for *Molecular Medicine* and I’m coming to you from the north shore of Long Island, New York.

In this week’s podcast episode: “A FOX In The Autoimmune Disease Henhouse,” “Interfering With Osteosarcoma,” and last but not least, “Cholinergic Agonists May Protect Against Preeclampsia.”

We’ve seen great advances in the biomedical sciences over the last several decades and this has been due to the integration of fields like molecular and structural biology, biochemistry and immunology. Integrating these fields has done two things. It has given us new perspectives to think about and it has also given us powerful new tools which we’re now using in medical research.

Molecular medicine is the discipline concerned with understanding the pathogenesis of disease at the molecular level, and, based on that knowledge, designing specific molecular tools for diagnosis, treatment and prevention. We introduced our journal *Molecular Medicine*, our journal, in 1994 so that scientists and researchers could communicate their recent discoveries to a multi-disciplinary, international audience who is interested in understanding and curing disease. *Molecular Medicine* is published bimonthly by the Feinstein Institute for Medical Research which is located in Manhasset, New York. As a quick reminder, stayed tuned at the end of the episode for details on how to win an iPod Shuffle at the end of this month. Alright, so let’s get started with some of the papers from our November-December 2007 issue.

The first paper in this “Mollie Medcast” episode is:

### **A FOX In The Autoimmune Disease Henhouse**

The members of the forkhead box class O transcription factors play an important role in controlling lymphocyte activation and proliferation. We’ll abbreviate forkhead box class O as FOXO. Drs. Kuo and Lin from Cathay General Hospital in Taipei, Taiwan evaluated the possibility that FOXO transcriptional expression is dysregulated in systemic lupus erythematosus and rheumatoid arthritis, two autoimmune diseases with tissue damage mediated by overactivation of autoreactive lymphocytes. Let’s abbreviate systemic lupus erythematosus - SLE and rheumatoid arthritis - RA. Drs. Kuo and Lin determined quantities of FOXO forkhead transcription factors in peripheral blood mononuclear cells from control, SLE and RA patients. Their results show differential regulation of FOXO1 in SLE and RA patients when compared with control subjects. The data suggest transcriptional dysregulation in FOXO1 may be linked with the pathogenesis of autoimmune disease and that FOXO1 transcript levels in peripheral blood may serve as a biomarker for disease activity.

If you or someone you know is affected by rheumatoid arthritis or lupus and you want to find out more about research, the North Shore-LIJ Health System on Long Island (<http://www.northshorelij.com>) has over 1000 clinical research studies going on right now in a variety of diseases. Over 15 of these studies deal with Rheumatology and more than 8 with Lupus. So if you are interested in finding out more about this or any of our other studies really, you can call 516-562-4874 for information and ask for Ruth. That number again in case you need

it is 516-562-4874. And if you want to look at the website, you can find the transcript for this episode: [www.molmed.org](http://www.molmed.org) and this phone number and the website to contact are included.

The next paper in our line-up this week is:

### **Interfering With Osteosarcoma**

Osteosarcomas are the most frequently occurring type of bone tumor. They are malignant tumors derived from bone tissues. Osteosarcomas are characterized by aggressive invasion, early metastasis and resistance to existing chemotherapeutic agents. Novel diagnostic and treatment approaches are needed to improve the poor prognosis of osteosarcoma. The stathmin family of proteins is important in signal transduction and is highly expressed in human osteosarcoma. Here, Dr. Wang and colleagues from China, investigate stathmin as a therapeutic target by using osteosarcoma RNA interference to reduce stathmin expression in human osteosarcoma cell lines. The title of the paper is, "Inhibiting Proliferation and Enhancing Chemosensitivity to Taxanes in Osteosarcoma Cells by RNA Interference-Mediated Downregulation of Stathmin Expression." Dr. Wang and colleagues show that downregulation of stathmin expression significantly inhibited osteosarcoma cell proliferation in vitro, inhibited tumorigenicity in vivo, enhanced apoptosis and enhanced chemosensitivity to taxanes in human osteosarcoma cell lines. These data indicate that RNA interference-mediated stathmin downregulation exerts potent anti-proliferative and chemosensitizing effects in human osteosarcomas.

The last paper in this week's podcast episode line-up is:

### **Cholinergic Agonists May Protect Against Preeclampsia**

Pregnancy-induced hypertension (PIH), also known as preeclampsia, is one of the major causes of maternal and fetal death. While the precise cause of preeclampsia is not known, aberrant cytokine production and placenta participation are considered to be important factors. Gestational cigarette smoking, which is widely accepted to be harmful to both the mother and the fetus, is protective against the development of preeclampsia. Based on the anti-inflammatory activity of nicotine, the major component of cigarettes, Dr. Dowling and her colleagues examined the effect of nicotine and other cholinergic agonists on placenta inflammatory responses ex vivo. The paper title is "Nicotine Inhibits Cytokine Production by Placenta Cells via NF $\kappa$ B: Potential Role in Pregnancy-Induced Hypertension (PIH)." Dr. Dowling found that nicotine and other cholinergic agonists significantly suppress placenta cytokine production following stimulation through the NF $\kappa$ B pathway. These data suggest that cholinergic agonists, including nicotine, may protect against pregnancy-induced hypertension.

That's it for this week's episode of "Mollie Medcast." You can find these papers and many more of them on our website, [www.molmed.org](http://www.molmed.org) that's [www.m-o-l-m-e-d.org](http://www.m-o-l-m-e-d.org). I'll be giving away an iPod Shuffle to one of our lucky frappr map members. To be eligible for the contest just visit our podcast page, [www.molmed.org/podcast.html](http://www.molmed.org/podcast.html) and put your pin on our *Molecular Medicine* frappr map. At the end of this month one winner will be randomly selected from our frappr map members and will receive a free shuffle. All you have to do is sign up! If you liked listening to this episode of "Mollie Medcast," please consider visiting iTunes and putting in a positive review for us. For questions or comments regarding this podcast, please send me an email at [margot@molmed.org](mailto:margot@molmed.org), [m-a-r-g-o-t@molmed.org](mailto:m-a-r-g-o-t@molmed.org). From Long Island, New York, this is [margot@molmed.org](mailto:margot@molmed.org), thanks for listening!

Written and Produced by Margot Gallowitsch-Puerta

Associate Editor, *Molecular Medicine*

Music: Opuzz.com

Photos: iStock

###