

## Professor Junjie Xiao: research-teaching nexus creates a new platform in the field of non-coding RNA

Received: 30 August 2017; Accepted: 11 September 2017; Published: 26 September 2017.

doi: 10.21037/ncri.2017.09.02

View this article at: <http://dx.doi.org/10.21037/ncri.2017.09.02>

Junjie Xiao (*Figure 1*), a Professor of School of Life Sciences, Shanghai University, has recently published an important original article entitled “miR-29b contributes to multiple types of muscle atrophy” in *Nature Communications* as a corresponding author, therefore School of Life Sciences, Shanghai University has made a breakthrough by being the corresponding institution of a publication in *Nature’s* sub-journal for the first time. Professor Xiao’s laboratory is situated in the School of Life Science Building at Shanghai University, and the perfect combination of well-arranged workbenches, scientific instruments and focused researchers creates a vibrant academic atmosphere.

### miR-29b: a new target for treating muscle atrophy

Professor Xiao shared his excitement on the newly published article. As we are all aware, muscle atrophy is a severe condition that threatens the human health and has serious adverse effects on the quality of life. Extended bed rest, aging and other factors may lead to muscle atrophy. MicroRNA dysfunction is closely related to various diseases such as heart failure and tumors, but it is still unclear as to the existence of a common microRNA target in muscle atrophy resulting from a variety of factors. “*Our research discovered a microRNA target, miR-29b, which is common in muscle atrophy resulting from various factors, and through cells and animal models, we have proven that the increase in miR-29b may lead to muscle atrophy. This means that miR-29b is the new target for treating muscle atrophy, and the inhibition of miR-29b may prevent and cure muscle atrophy.*” Professor Xiao further explained that they would conduct experiments on larger animals, and hopes that the results may eventually be applied to clinical practice.

### Exploration of non-coding RNA and heart failure

Professor Xiao is in charge of the Cardiac Regeneration and



**Figure 1** Professor Junjie Xiao.

Ageing Lab at Shanghai University, which explores non-coding RNA and heart failure from two angles.

Firstly, to explore new treatments for heart failure from the physiological point of view. Exercise can lead to cardiac physiological hypertrophy, while cardiac physiological hypertrophy has protective effects from heart failure. In their collaboration with Harvard University, Professor Xiao’s team not only discovered miR-222 to be one of the key microRNAs in the exercise-induced physiological cardiac hypertrophy, but that miR-17-3p is also involved its occurrence. The increase of miR-222 and miR-17-3p expression would protect ventricular remodelling caused by cardiac ischemia-reperfusion injury. Secondly, to explore new treatment methods from the perspective of pathology. The team has found that miR-433 was a common target of cardiac fibrosis caused by various factors. The upregulation of cardiac fibroblast miR-21-3p and cardiomyocytes miR-155 is a major cause of acute heart failure, therefore the inhibition of their expression may inhibit acute heart failure. “As 30–50% patients who have heart failure associated with muscle atrophy, we have also discovered that miR-29 is a common target of multiple types of muscle atrophy. We are currently further testing to see if miR-29 contributes to Ang II-induced muscle atrophy. In terms of future laboratory research, we will continue to

study non-coding RNA and heart failure from the above two angles, particularly in the study of circular RNAs.

### **A good friend in life, an excellent mentor in scientific research**

As a coffee lover, Professor Xiao enjoys drinking a nice cup of coffee while hanging out with his students, sharing his experience and thoughts on how to be a qualified researcher. When he noticed that some students were working overtime, he purchased sofa beds for them to rest in the laboratory. As we talked about education and training, Professor Xiao told us that his study and work experience at Anthony Rosenzweig laboratory at Harvard University had a profound impact on him, therefore he trains his students in the same ‘Harvard way’. He encourages students to work on three topics, meanwhile requires them to repeat an internationally recognized experiment. Although the results may never be published due to the lack of new conceptions, Professor Xiao concerns about the process, so that students are able to develop good experimental habits.

### **Teaching & research are complementary and move forward together**

Professor Xiao believes that teaching motivates scientific research and vice versa, and that scientific research can be actively integrated into the teaching progress. For example, a course named “Innovation in China” offered by Shanghai University has created great influence in China. In this course, a number of high-profile professors are invited to give lectures to undergraduates, and many hot topics in society are discussed in order to inspire students to grow innovative thoughts and ideas. Teaching promotes scientific research by attracting more students, in particular those who have genuine interests in science may join the team. Professor Xiao emphasised that if a teacher can meet students who are really interested in scientific research, it is rewarding even for the teacher.

### **Sharing aims and ideas, implementing Non-coding RNA Investigation**

“My decision to create a new journal *Non-coding RNA Investigation* with AME Publishing Company is not only because it fits my research field, but I also agree with

AME’s philosophy, and I hope China can produce an internationally-known journal in this field. I hope this journal can generate an Impact Factor in three years’ time, but most importantly, I hope this journal will be an authoritative journal in the field of non-coding RNA research, and acts as a new platform for sharing latest research results”. As a powerful backer of this journal, Professor Xiao insists that not only will publish outstanding laboratory results of cardiac regeneration and aging in NCRI, but he will also try his best to invite experts in this field at home and abroad to contribute to the journal. He hopes his efforts will push NCRI to become a new platform that would attract the world's leading experts and scholars to unveil their latest scientific research results.

### **Expert’s introduction**

Professor Junjie Xiao, Principal Investigator, Associate Professor, Cardiac Regeneration and Ageing Lab in Shanghai University, Shanghai, China. His major research interest is cardiac regeneration and ageing, especially using exercise as a platform to identify novel targets for enhancing cardiac regeneration and combating cardiac aging. He is Committee member of the 2015 USA BCVS Meeting Program Committee (New Orleans July 13–16 in New Orleans, LA). He is the Editorial Board of *BMC Medicine*, Editorial Board of *Journal of Cardiovascular Translational Research*, Editorial Board of *Cell Transplantation*, Editorial Board of *Journal of Thoracic Disease*, Associate Editor of *BMC Sports Science, Medicine & Rehabilitation*, and Associate Editor of *Frontiers in Cardiovascular Medicine*. In addition, he has been the guest editor of *Current Genomics*, Mini-Reviews in *Medicinal Chemistry*, *Current Stem Cell Research & Therapy*, *Frontiers in Genetics*, and *BioMed Research International*. He is the author or co-author of over 50 scientific articles, including *Nature Communications*, *Cell Metabolism*, *Annual Review of Genomics and Human Genetics*, *Circulation*, *Theranostics*, *Journal of Molecular and Cellular Cardiology*, and *Journal of Cellular and Molecular Medicine*. He has been the reviewer of *Physiological Reviews*, *BBA-Molecular Basis of Disease*, *BMC Medicine*, *Scientific Reports*, *Journal of Cellular and Molecular Medicine*, *Molecular Metabolism*, *Journal of Molecular Medicine*, *Human Genetics*, *European Journal of Human Genetics*, *Stem Cell International*, *Cell and Tissue Research*, *Molecular and Cellular Biochemistry*,

*Clinical and Experimental Pharmacology and Physiology, Journal of Visualized Experiments, Archives of Medical Science etc.*

## Acknowledgments

*Funding:* None.

## Footnote

*Provenance and Peer Review:* This article was commissioned by the editorial office, *Non-coding RNA Investigation*. The article did not undergo external peer review.

*Conflicts of Interest:* Both authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/ncri.2017.09.02>). CMY and MJW reports that they are full-time employees of AME Publishing Company (publisher of the journal).

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

*Open Access Statement:* This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

(Editors: Crystal M. Yan, Molly J. Wang, NCRI, [ncri@amegroups.com](mailto:ncri@amegroups.com); Translator: Li Ma)

doi: 10.21037/ncri.2017.09.02

**Cite this article as:** Yan CM, Wang MJ. Professor Junjie Xiao: research-teaching nexus creates a new platform in the field of non-coding RNA. *Non-coding RNA Investig* 2017;1:11.