Three questions for Dr. Sudarshan Anand

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What’s been the most interesting development in your area in the last two years?

The most interesting development has been the first report of a microRNA inhibitor (Miravirsen) that entered Phase I trials and demonstrated excellent safety profile and efficacy in patients with Hepatitis C virus infection. There are currently more than 100 clinical trials that are looking at miRs in cancer as biomarkers and potential therapeutic agents. MicroRNA is a pretty new field. The first microRNA (miR) gene was discovered only in 1993. However, the field was dormant until 2000 to 2001 when multiple
labs identified the second microRNA in *C. elegans*. Such rapid progress going from discovery of a novel class of genes to drugging these pathways in human diseases in a decade is really remarkable. Outside of the microRNA world, there have been some exciting results in gene silencing (RNA interference) approaches in early clinical trials. I am optimistic that these early data herald the era of RNA therapeutics over the next decade.

**What projects are you currently working on and are there opportunities for fellow faculty to participate?**

My lab is focused on understanding how non-coding RNAs, especially microRNAs shape the tumor microenvironment. We are interested in miR signatures that capture the host response to cancer especially in the context of treatments such as radiation and chemotherapy. We think we will be able to use miR/non-coding RNA signatures from the blood to predict which patients are responding to specific treatments. We are also interested in developing miRs as therapeutic agents that will enhance the efficacy of current cancer treatments. Since we work mostly on blood vessel cells (endothelial cells), our work is broadly applicable across many types of cancers and even other diseases such as cardiovascular diseases, inflammatory diseases, etc. I must mention that we are fortunate to be in a place with outstanding physicians who are interested in research and who have initiated a few joint projects, which are underway. We are a very open and collaborative lab and welcome input/collaborations from fellow faculty.

**What is the most important aspect of support that OHSU provides to you currently and how would you like this or other support to grow in the future?**

I moved to OHSU last year, and it has been a very positive experience so far in building my research program here. I have had great mentorship from my department, particularly my chair Dr. Lisa Coussens and my faculty mentor Dr. Pepper Schedin. We have had a few mentoring workshops for junior faculty in the department on building a lab culture, budgeting, promotion and tenure, etc that have been very helpful in giving us a perspective from faculty that have been there and done that. I think this sort of formal and informal support is critical because we need excellent leadership and management skills to run a successful lab and get funded.

**About Three Questions**

This Q&A series features OHSU School of Medicine faculty members talking about their work with the goal of getting to know them and different areas across the school. [View more.](#)