



The ALBA Diversity Podcast

Season 1- Episode 10

Dr Ohtan Wang - Being a Chinese woman neuroscientist in Japan

Speaker Key:

SM Shruti Muralidhar (Podcast host)

OW Ohtan Wang (Guest)

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SM Hello and welcome to the ALBA Diversity Podcast, an ALBA Network undertaking to profile and highlight diverse and immigrant neuroscientists. The ALBA Network aims to promote equity and diversity in the brain sciences. We talk to neuroscientists across positions, career paths, and backgrounds, to better understand their personal journeys.

We showcase the grit and determination it takes to overcome hurdles as part of underrepresented or minority groups. We talk about what keeps them going as individuals and as neuroscientists in today's world. And today we have with us Dr Ohtan Wang. Please go ahead and introduce yourself.

OW Sure. Hi, everyone. My name is Ohtan. I'm a team leader of the Laboratory of Neuroepitranscriptomics at RIKEN Centre for Biosystems Dynamics Research in Kobe, Japan.

SM And what is your specific area of study?

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OW Brain and RNA are the two key words of my research, and we are particularly interested in understanding the dynamic RNA regulation at neuronal synapses. So, my lab is named the Laboratory of Neuroepitranscriptomics, and it's part of this burgeoning field of epitranscriptomics.

SM I've never heard epitranscriptomics before. Is it a combination of epigenetics and transcriptomics put together?

OW Yes, exactly. It's epitranscriptomics in neuroscience, and it's required for the synapse function underlying the cognitive development and the decline. And that's what we want to know. We are using rodents, mice, so that we can study, we can start from the molecular identification to cell imaging all the way to behaviour tests using the transgenic or the genetically engineered animals.

SM When was the first time you thought about neurons and the brain? When and where in your training did you realise, the brain is an amazing organ to study?



OW When I was a kid, I was just curious about how I can perceive the surroundings and communicate. I somehow had this fear that I wouldn't be able to see things in the same way or a similar way to other kids, and they can make fun of me. So, I somehow had this fear, and I was also worried that they may think differently but that they won't be able to tell me, because they really cannot see my inner brain to confirm I was wrong. So, I was just curious.

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SM That was a very big realisation for a young child. You basically just described qualia, right?

OW Yes. I guess I was worried about things like this, about communicating. And also, I was very curious and I would imagine doing things that seemed impossible, like flying over the mountains or pretending to be a princess or a fighter or an Olympian champion. And I was just curious, but I didn't know we can actually study it. We can actually take approaches to design experiments to study its function.

SM That's a wonderful kind of curiosity to have as a child. How did it translate into a career?

OW I had a great fortune to study as a PhD student under Professor Michael Quick at University of Southern California. Before I joined his lab, I was already a cell biologist. I was always curious about how cells work. But, in his lab, I started to look at the neurotransmitter trafficking in the brain more specially about GABA transporters on the plasma membrane, and how that can regulate GABA.

And a similar concept can be applied to serotonin, dopamine, norepinephrine, and other neurotransmitters, that it can make us feel sad, happy, calm, or anxious. It's fascinating. And my PhD thesis was about how the GABA transporter is regulated.

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SM Can you tell us a little bit about the kind of work you do, or specifically the kind of questions you're looking to answer?

OW Yes. As I started to explain about the neuroepitranscriptomics, epitranscriptomics is concerning the chemical and the structure of properties, the physiological functions and the disease relevance of RNA chemical modifications. There are 170 of them known today, and many of them are in the brain. And even more that are not in the brain but they can affect brain function.

So, our previous work and the current work identifies that the synaptic transcriptome is highly decorated with RNA modifications. The RNAs that are carrying these modifications are the ribosome RNAs, transfer RNAs, messenger RNAs, micro RNAs, piwi RNAs, CAR RNAs, circular RNAs, all sorts of RNAs.

So, our goal is to really understand how these RNAs, with their modifications, can respond to the synaptic activity that underlies the cognitive changes in the brain during development and also during functional decline.

SM That's absolutely fascinating. At synaptic level, molecular transformations and molecular gating, and the way you describe the kinds of RNAs that are at the synapses just completely blew my mind.



OW I think the RNA modifications perfectly fit into this very highly responsive and dynamically regulated gene expression paradigm.

SM Do you have somebody who has been a role model to you, who you think has been a mentor?

OW Yes, at the time I have four mentors, in grad school, in my postdoc training, and I can consider all of them my role models. And my students in the lab, my secretary is also my role model, because I consider people who have passion, who care about their work and they have developed their own approaches to their mission, to their dream, they're all my role models.

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SM Is there something specific that you've learned, something very strong that's stayed with you through all these years?

OW I think being persistent is one thing that I have seen many people that are very successful in their job, in their career, and I start to see this common character, which is being persistent, being true to their mission and focus.

SM That's a great quality to have, especially in science, because we're faced with so much failure on a daily basis, on a weekly basis. And you're absolutely right, being persistent is probably the only way out, probably the way to handle the failure.

OW Yes. My mentors always provided me an environment. They provided the safe and the fun research environment. Once they are sure that I'm on track, they let me do what I want to do, and explore and fail and learn. Throughout my graduate career and also postdoc training, I was free to talk to colleagues, other students, any time.

SM That is so important, to learn from other people. Also to learn from your own failures is... Now, we'll shift a little bit. Do you consider yourself to be a part of an immigrant group or a minority group? Have there been times where you felt that you are part of a group that's not a majority, and have you faced either very subtle discrimination or very overt discrimination because of that?

OW I am a Chinese female scientist in Japan. So, depending on your definition of group, I guess I can say that I'm in a tiny, tiny minority group, for sure.

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SM Would you say it's intersectional? You mentioned your nationality, or, I guess, your culture and ethnicity of you being Chinese, but also, you being a woman scientist. So, I guess it's the intersection of a woman in a Japanese, male-dominated STEM field.

OW Yes, I am in an intersection, and it's very easy to get hit when you are in the intersection.

SM Exactly.

OW I think I face the challenge of discrimination a lot. I think the people that I face discrimination from are the people who don't really know me. They are making decisions based on my CV career, but they don't know me as a person.



But also, I think sometimes the positions are very, very limited, and people have to make decisions. So, we have to be aware that discrimination is there consciously and unconsciously. But I was also welcomed and supported by many scientists in Japan.

SM Tell us a little bit more about who supported you. It's always nice to have allies, like you just mentioned.

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OW The people who supported me are most of the people who know me well, and they know I can do the job and they want to see more diversity, and they do have expectation for me to contribute to the diversity of the Neuroscience Society in Japan. For example, I'm part of the diversity committee at the Japanese Neuroscience Society, so I think I do have the support. And I have the support for a reason, for a common goal.

SM That's wonderful. You've already segued into our next talking point which is diversity. Congratulations on being part of such an important group. It's so nice to hear that Japanese Neuroscience Society thinks it's important enough to have a diversity group. What does diversity mean to you?

OW Diversity means, to me, that I, or anyone, will feel comfortable expressing themselves, expressing their thoughts, without worrying that by expressing themselves they can be excluded from professional opportunities. I think it's extremely important in science, especially in science in academia, that we believe that fair competition is a core values.

SM In STEM in general, having a diverse set of voices is so important. Have you come across an example, maybe, of an incident in your life where having diverse voices actually helped or made addition?

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OW Yes. I can think of our research. Our research requires people with different training backgrounds, with different opinions, different ways of approaching the problem. My research group is very diverse. My working environment at RIKEN is very diverse, and I think it's essential for us, by people from different backgrounds come to talk together and to be able to express their own scientific thinking. I think that's how we can achieve some understanding of complex problems in the lab.

And it's not restricted to just our lab. I think international collaboration is so important, which brings that nobody should be excluded based on their gender, religion, age. I think it's important on a daily basis. As long as we're doing the research, diversity is essential, and we realise that. We know it.

You talk about how to make the community more diverse. I think once we start to have a common goal, on passion, one goal, we realise that we need each other, and we start to appreciate each other. There is no room for discrimination because it's just not on our mind anymore.

SM What are some of the things that you do as part of the diversity committee of the Japanese Neuroscience Society?



OW We're very detailed. I think it's really good that we come together to actually read through the current policies and to know the situations more quantitatively so that we can understand the situations better. And we work on the regulations, for example, for the society, for the Japanese government. We worked through their policies. We worked through their programme for promoting gender equality. And we discussed what that policy may affect or may affect the society.

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And we support international efforts for equality. For example, ALBA, we supported the ALBA Declaration. And we also work raising awareness.

SM That's very important, because sometimes, especially when new students come in, I've seen that they sometimes feel lost. Societies like this have to do the right thing, at that point.

OW Yes.

SM Academia is very notorious for not allowing you to have a work-life balance. How have you managed so far?

OW I put a lot of hours into work, for sure. If I had more time, I would also put it into work. It's hard for me to separate work or life. I love what I'm doing. My lab is very new. My lab started from April in Kobe, and I have been working with Kyoto University. I'm still affiliated with Kyoto University. I have been living in Kyoto for the past eight years.

But I guess I manage. I have a great family, and I have great friends. My husband and daughter are doing very well. It didn't appear to me that my working hard is hurting my family life. The reason I stay in Kyoto and commute, which is a long commute, is that I would like to have dinner with my family every day, and it's very, very important for us. We have to have one... It doesn't have to be very long, but we just have to have this quality family time every day. So, I commute.

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One good thing that happened the last year is that both my husband and I can be at home.

SM Yes, a lot of bad things because of the pandemic, but also some really nice things because you get to spend time with your family, that's true.

OW Amazing things, yes. I have female friends who, I think, are currently struggling with handling family and also career at the same time, especially the female friends who have small children.

SM It's been so difficult in general, for women scientists. So, last year, when... I started interviewing only last year for this series, and we've gotten so many people and it's both empowering and very sad that it doesn't matter where you are. A woman scientist, the problems are always the same. All women go through the same problems, discrimination in terms of being a woman, discrimination in terms of being a scientist, in terms of being an immigrant, in terms of having children.

OW Yes.



SM Somebody asked me how I felt, and I said, it feels not alone. So, you feel like there is a connection, and that's what I try to do with the episodes. I try to bring up these issues, and maybe it'll help somebody else feel like they're not alone.

OW Oh, my God, that's so important. When I have problems and when I don't know what to do, I start to think whether it's my problem. Is that my behaviour? Is that something I did wrong? But seeing people's stories and experience, I think I can stop blaming myself and find support. No matter what, I just need to focus on my mission.

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SM Like you said, keep the big goal in mind, and we keep trying.

OW Yes.

SM Thank you for listening to this episode of the ALBA Diversity Podcast. To know more about the ALBA Network and its activities to promote equity and diversity in the brain sciences, please visit alba.network. You can also register as a member, for free, and take full advantage of the network's resources. For more details, follow the Twitter handle, [@network_alba](https://twitter.com/network_alba) or [AlbaNetBrain](https://www.facebook.com/AlbaNetBrain) on Facebook.

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