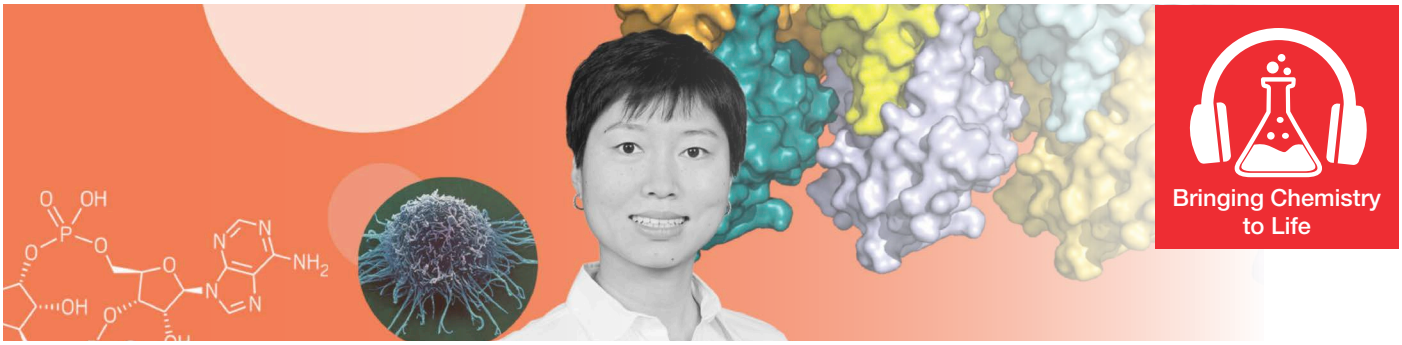
Bringing Chemistry to Life podcast series

ThermoFisher SCIENTIFIC

Season 2: **The 2020 C&EN's Talented 12**
Episode 11: **The chemical immunology revolution**



Episode abstract

Dr. Lingyin Li is strong, determined, smart and brave. She knows that what doesn't kill you makes you stronger and that challenges are just steps towards success. While she survived her fight with cancer, many people don't. Her biochemistry research, however, is as brave as she is and offers the promise to revolutionize cancer treatment. This new way of thinking overcomes the limitations of the two main therapeutic approaches: the general toxicity of chemotherapy and the drug resistance of targeted therapy.

Lingyin's study of the cGAMP cascade is as new as it is disruptive, offering a completely new perspective on how we could use chemistry to activate our own immune system. This is opening the door to a completely novel approach to the use of immunotherapy as a targeted treatment for cancer and viral infections.

This interview is another great example of chemistry research defining new ways in an adjacent scientific discipline and, as it often happens in this podcast, an intriguing personal story. A perfect finale to close this exciting season 2 of Bringing Chemistry to Life, and a hint of more of what's to come in our next season.

About our guest

Dr. Lingyin Li,

Assistant Professor of Biochemistry at Stanford University School of Medicine

Lingyin's group site: https://lingyinlilab.stanford.edu/

C&EN Talented 12 profile of Lingyin:
https://cen.acs.org/pharmaceuticals/oncology/Lingyin-Li/98/i31

Recent Publications from Lingyin:

- Human SLC46A2 is the dominant cGAMP importer in extracellular cGAMP-sensing macrophages and monocytes
- LRRC8A:C/E Heteromeric Channels Are Ubiquitous Transporters of cGAMP
- Structure-Aided Development of Small-Molecule Inhibitors of ENPP1, the Extracellular Phosphodiesterase of the Immunotransmitter cGAMP
- Extracellular cGAMP is a cancer cell-produced immunotransmitter involved in radiation-induced anti-cancer immunity
- STING polymer structure reveals mechanisms fro activation, hyperactivation, and inhibition
- Diversity Is a Strength of Cancer Research in the U.S.

Lingyin's Content Recommendations:

- For the Love of Enzymes: the Odyssey of a Biochemist A book by Arthur Kornberg)
- The Billion Dollar Molecule: One Company's Quest for the Perfect Drug (A book by Barry Werth)
- The Upside of Stress: Why Stress is Good for You, and How to Get Good at It (A book by Kelly McGonigal)
- Grit: The Power of Passion and Perseverance (A book by Angela Duckworth)

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