

Hong Wu has a lovely smile, a relaxed attitude, an incredible history — and the track record of a genius. She is a molecular biologist, a geneticist, and winner of one of the nation's top scientific awards: a renewable Howard Hughes Medical Institute investigatorship.

Wu and her associates strive to understand how normal cells become cancer cells.

They concentrate on a gene called PTEN that suppresses tumors and is frequently missing from cancer cells. No one knows why.

"If you remove the PTEN tumor suppressor gene from a cell, you have a runaway train," Wu says. "The cell goes out of control and keeps reproducing itself. That's one definition of cancer.

"With generous support from the Howard Hughes Medical Institute, my colleagues and I have discovered that PTEN controls several important steps involved with preventing normal cells from becoming a cancer cells. Those steps include normal cell division, cell death and cell migration," says Wu, who is an assistant professor at UCLA's School of Medicine.

Wu first attracted wide attention in the scientific community in 1995.

At that time, researchers believed that a hormone called erythropoietin stimulated specific cells to produce red blood cells, but they lacked definitive proof.

Then a postdoctoral student at the Whitehead Institute in Cambridge, Mass., made a remarkable breakthrough: She defined when, where, and how erythropoietin relates to the production of red blood cells.

The student was Hong Wu.

Wu says she is determined to figure out, step by step, how red blood cells are made and how to control tumor formation. That knowledge could lead to new and effective treatments for cancer and other diseases.

Hong Wu was born in 1957 in Beijing, China, to a young physician teaching statistics in medical school and her husband, a professor specializing in biochemistry and radiotoxicology at a research institute.

Wu, her older brother and younger sister led comfortable, socially privileged lives until Wu was 9.

Then came China's cultural revolution.

"A happy family was separated," Wu recalls. "My mother went to South China, where she built houses and created rice fields from virgin land. My father went to Northwest China to shovel coal in a factory.

"Schools were closed," continues Wu. "For a year, my brother, who was 11, my sister, who was 5, and I lived alone in Beijing. Then my sister and I left my brother alone and traveled by train to South China to be close to our mother. We attended schools that were six miles apart, and mother's work camp was six miles in a different direction.

"I walked to see my sister every week, and then we would walk another six miles to see my mother working."

Wu graduated from high school in 1976, a few months before the cultural revolution ended. She spent the next two years laboring on a farm where she was also a "barefoot doctor," offering medical advice gleaned from books, dis-

persing herbal medicines and performing procedures such as acupuncture and vaccinations. "Those years taught me the value of hard work and the value of a good education," Wu says.

In 1978, Wu enrolled in Beijing Medical College. She graduated second in her class on July 16, 1983. On the 17th, she married fellow student Xin Liu (it was his birthday). That same day, Hong and Xin learned they had been chosen by a committee of Chinese and American scientists to compete with a select group of Chinese students for the right to pursue their Ph.D.s in the United States.

Two months later the couple was selected to study in the U.S.

Liu earned his Ph.D. in molecular genetics at Brandeis. Wu got her doctorate in biological chemistry at Harvard, where she studied with Rudolf Jaenisch, a pioneer molec-

Dr. Hong Wu

PROFILE

Why do normal cells become cancer cells? Hong Wu searches for the answer.



ular geneticist. She continued her studies with world renowned cell biologist Harvey Lodish at Whitehead Institute, which is affiliated with the Massachusetts Institute of Technology.

In 1996, four elite institutions — Harvard, Duke, Einstein College of Medicine and UCLA — each offered Wu and Liu teaching and research positions.

"We chose UCLA because there is tremendous support for junior faculty here, and there is a group of very bright people here working in my field at UCLA's Jonsson Comprehensive Cancer Center. Also we have two children whom we want to grow up in a culturally diverse environment.

"UCLA is the best place to build a strong research group, and to teach, and to have fun. That's what I'm doing, and I couldn't ask for more." ★