

Tumor Immunologist YAN Xiyun: Enjoy Doing Science

By XIN Ling (Staff Reporter)

The year 2012 saw a bumper harvest for Prof. YAN Xiyun from the Institute of Biophysics (IBP). As a senior researcher on tumor immunology, she published a series of important discoveries in world-leading journals like PNAS, Blood and Nature Nanotechnology with her colleagues. As chief scientist of a National High-Tech R&D Program on tumor antibody drugs, she received the National Natural Science Award at the Great Hall of the People. She was the only female scientist coming under the spotlight for “the Women’s Media Award 2012”.

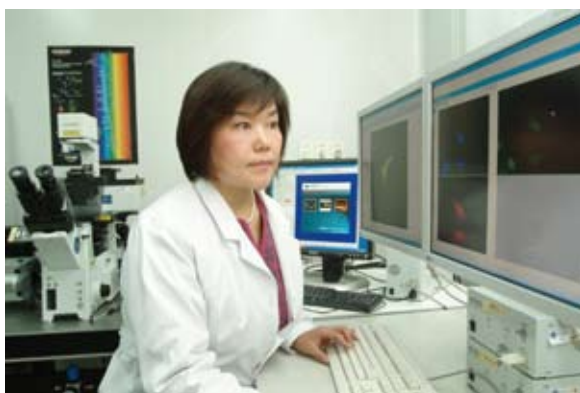
“Science is a noble career. It’s the biggest joy of my life. Staying in the lab makes me feel free and comfortable. To me, being a scientist means not only painstaking work but the happiness it brings,” she claimed.



Prof. YAN Xiyun.

In a light green dress, Prof. YAN Xiyun was speaking on the stage, sharing her career experiences and beliefs with a room of audience. Her inspiring views and humorous language aroused applause from time to time. Just before the speech, she received this year’s CAS award for “Ten Most Outstanding Women in Science” — another title on her already luxuriant honor list.

To many tumor scientists, YAN Xiyun is a shining name in their research realm. Fifteen years ago, in order to improve cancer therapy, she started looking for novel biomarkers on tumor vessels. Today, her team has not only



Prof. YAN working in her lab.

revealed an effective target and its signaling mechanism, but developed an antibody which is already in pre-clinical trials.

According to Prof. YAN, “our strategy avoids drug resistance and starves the tumor by cutting off its supply of oxygen and nutrients. The antibody is one of the first of its kind developed by Chinese scientists. It’s receiving worldwide recognition, and we expect clinical trials to begin in 2015.”

Except for achievements in tumor angiogenesis, Prof. YAN’s lab has also scored key progresses in the early diagnosis of tumors. Based on their discovery in 2007 that iron nanoparticles have innate peroxidase activity, the lab has recently used certain nanoparticles to target and visualize tumors at high precision.

“While traditional diagnostic methods involve three steps and take three hours to complete, our nanoparticle-based method needs only one step and allows tissue recognition and visualization at the same time. It’s also much cheaper,” Prof. YAN was excited.

Such work has opened up a brand new area of research on the applications of nanoparticles, she said, from medicine to environmental control and pollution treatment. It also inspires scientists to further explore possible



catalytic activities of nanomaterials. For these pioneering contributions, Prof. YAN and her coworkers were honored with the second prize of National Natural Science Award — a very prestigious award for science workers in China.

However, when the professor looked back, she described herself as “very fortunate” to have gone into science. As the only girl in her family, she got a neutral name from her father and was raised up like a boy. She worked at an auto parts plant for four years before entering the Henan Medical University in 1977.

YAN first came to IBP in 1983. She was curious about biophysics and hoped to gain some research experience before starting to work as a doctor at the Sino-Japanese hospital. Luckily she worked with Prof. BEI Shizhang, founding father of Chinese biophysics, and learned cell biology from her senior colleagues.

“At that time, one of my colleagues became ill, so I had to take over his work. To my surprise, we got good results. Many people encouraged me to abandon my doctor’s plan and settle down at IBP. It was a difficult decision but I decided to stay,” Prof. YAN recalled.

In Prof. BEI’s lab, she gained a good foundation in scientific research and was greatly influenced by her mentor’s serious attitude toward science. She often saw the over eight-year-old professor working with his electron microscope for five or six hours. He told them, “We should always remember to make ourselves an honest man, an earnest worker and a scientist with down-to-earth attitude and the courage for innovation.”

Later, Prof. BEI recommended YAN to work at the Max-Planck Institute of Cell Biology. It was a good chance for a young scholar like YAN to see the outside world. In 1993, she gained her PhD from Heidelberg University. Then she carried out postdoctoral research at the Memorial Sloan-Kettering Cancer Center in the US. There she learned about immunology and participated in developing the world’s first chimeric antibody against melanoma. “The study in the US gave me many new ideas for developing research on tumor angiogenesis after I returned to China”, Prof. YAN noted.

In 1997, she returned to IBP via the “Hundred Talents Program”, a global recruitment program launched by CAS and first of its kind in China since its opening-up drive. From then on Prof. YAN and her team have devoted themselves to the research of tumor angiogenesis and tumor diagnosis for more than 15 years. Their findings pushed back scientific frontiers from time to time, and in 2012 they reaped a fruitful harvest.

“From my experience it seems I’ve been doing the right thing at the right time and place,” she laughed.

“Science is a noble career, and we must enjoy the



Prof. YAN at Inner Mongolia’s Hulunbuir Grassland in 2010.

happiness it brings to us,” Prof. YAN told her audience, “it all starts with our love in doing science.” For the professor, science is rather a hobby than job. Although many people think science makes an abstract and tough career, simply staying in the lab can help cure her flu. Sometimes she giggles at her mouse and hurrahs for a miraculous result.

Like other professions, science can bring a strong sense of achievement. For Prof. YAN, her work in tumor angiogenesis has given her the greatest satisfaction, since it is built on her sustaining research over many years, and it is a great comfort to see it mature to the application stage to solve real clinical problems.

In 2011, Prof. YAN as the secretary general welcomed more than 3,000 scientists from around the world to attend the 17th International Biophysics Congress in Beijing, including her teachers from Germany and US. “I could feel they were really proud of me.”

As for young women in science, Prof. YAN suggested they take a more positive attitude toward scientific research and stick to their faith in science. When her PhD students graduated last year, she passed on special wishes to those of the same gender with her: never give up science easily; you can be as good as anyone and acquire more beauty than male colleagues.

Besides wisdom, women scientists can show their beauty, softness and virtue on many occasions, even during work. They have much diverse roles than the male stereotype always associated with strength, she explained.

“A female role model in my eye is the combination of a wise professional, an elegant lady and a good daughter, wife and mother. My motto is: love science, love life and love beauty. I owe a lot of thanks to my colleagues and my family, and I’ll work harder to use my wisdom and beauty to contribute to the scientific community.”