

The Nobel Prize in medicine has been awarded for Natural Cures against Malaria and Roundworms



They have saved of millions of lives. (Reuters/Brian Snyder/Kyodo)

WRITTEN BY [Akshat Rathi](#) October 05, 2015

The 2015 Nobel Prize in medicine has been awarded to three scientists from China, Ireland, and Japan. One half of the prize is shared by William Campbell of Drew University and Satoshi Ōmura of Kitasato University for their work on “a novel therapy against infections caused by roundworm parasites.” The other half goes to Youyou Tu of the China Academy of Traditional Chinese Medicine for her discovery of “a novel therapy against malaria.”

The Nobel Prize committee said that the researchers' breakthroughs have had an enormous impact on improved human health and reduced suffering.

All three researchers extracted naturally occurring chemicals that became crucial drugs against diseases that affect hundreds of millions around the world. The prize is a nod to the fact that nature still has a lot to offer in terms of medicine.

Tu's award has special significance. She is only the 12th woman among the 210 Nobel laureates in medicine. It is also an acknowledgment of advances in Chinese science, which [many](#)—especially in the [state-owned media](#)—have lamented has rarely been recognized by the Nobel committee. Tu is the first Chinese scientist to win the prize for medicine and only the third Chinese citizen to win a science Nobel.

The year's most prestigious prize in medicine has been [bestowed upon Youyou Tu](#), the lead discoverer of powerful malaria drug artemisinin. **In giving her the prize, the Nobel Prize committee has recognized the role ancient knowledge can play in the modern world. But her extraordinary tale, which began during the Vietnam war, also shows traditional medicine's limitations.**

In the war, the North Vietnamese were not just fighting American-supported forces but also failing to fight malaria. The parasite that caused the disease had developed resistance against chloroquine, which was commonly used as treatment. So, in desperation, they turned to China's leader, Mao Zedong, for help.



Mao's answer was to make searching for a new malaria drug a military project. Soon, more than 500 scientists were involved. One group screened some 40,000 known chemicals to find a malaria drug. The other turned to traditional medicine literature and sent for finding "secret cures" in Chinese villages.

Those looking at traditional medicine literature succeeded, but not easily. Tu described the challenge in 2011 in the journal [Nature](#)(paywall).

We investigated more than 2,000 Chinese herb preparations and identified 640 hits that had possible antimalarial activities. More than 380 extracts obtained from 200 Chinese herbs were evaluated against a mouse model of malaria. However, progress was not smooth, and no significant results emerged easily.

The first taste of success came when an ancient text revealed a method of using qinghao—the Chinese name for sweet wormwood—to extract artemisinin. After five years, in 1972, Tu had found a method to successfully extract the drug from the plant. But such were the days of China's [Cultural Revolution](#) that clinical trials could not be performed.

Tu's team volunteered to be the first patients to deem the drug's safety, and only then could they go out to do proper trials. But soon after, when the war in Vietnam ended, the project that found the drug was disbanded. Even though Tu had managed to publish her results widely by the 1980s, the development of the drug languished.

It took nearly 30 years for the World Health Organization to endorse the drug. The reasons for the delays [are not clear](#), but were perhaps caused by a combination of political instability, lack of patents that could spur pharma companies to invest in the development, and malaria afflicting mostly the poor.

Though it took time, Tu's method showed other Chinese researchers how to capitalize on the ancient knowledge hidden in scrolls and passed down through word of mouth. China's success is extraordinary in the light of [India's failed efforts](#) to turn its much-treasured traditional medicine into widely-useful therapies. While chemicals sourced from Chinese herbs such as huperzine A (treats memory dysfunction) and paeoniflorin (treats cardiovascular disease)

have **successfully** undergone rigorous clinical trials and are set to find wider use soon, none of India's Ayurvedic medicines have reached that stage.

The plant- and animal-based treatments of traditional medicine contain hundreds of chemicals, which can vary hugely in their amounts from one batch to another. If it works, there is no understanding why it worked or whether it will work again. The rigor of clinical trials, which allows for development of replicable results, forces researchers to find the active ingredient from a natural source that shows the most promise. The story of artemisinin is one where Tu and her colleagues managed to marry the knowledge of Chinese traditional medicine with the rigors of modern medicine.

Not all Chinese or Indian researchers agree that they need to conform to those rules, but the fact is that those strict rules have allowed the development of therapies that have more than doubled human life expectancy.

So, instead of peddling SINthetic pseudotherapies under the guise of traditional Chinese medicine or Ayurveda, researchers should take the hard route, like Tu did, and make ancient knowledge actually useful.



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