



His peers in the West may be skeptical, but Hongyun Huang is convinced his work is on target. Huang has attracted much attention—not all of it favorable—for a controversial procedure whose supposed effect is difficult to prove.

Huang takes nasal cells, dubbed olfactory ensheathing cells, from aborted fetuses and injects them into people's spines. These cells are one of only a few types of nerve cells that are known to regenerate. Huang says the cells can also renew nerve cells in individuals with spinal cord injuries or diseases such as amyotrophic lateral sclerosis, Parkinson disease and multiple sclerosis.

Huang has many believers. Since 2001, more than 900 people have opted for the procedure, those from outside China shelling out about \$20,000. These individuals describe in moving detail how a modest increase in their mobility can mean a massive improvement in the quality of their lives (*Nature* **437**, 810–811; 2005).

Two people died shortly after the procedure, but Huang says they were extremely ill individuals hoping for a last-ditch cure. He adds that nearly 70% of the individuals who contact him about the procedure die while still on the waiting list.

Within China, ten doctors have visited Huang to learn the technique, but elsewhere, respect from scientists has been harder to come by. Huang has not yet been able to publish his work outside China and critics note that his method hasn't been tested in a controlled study, making it difficult to rule out placebo effects.

But similar procedures—such as injecting stem cells or Schwann cells—have not been effective, Huang says. That's proof that the olfactory ensheathing cells—and not the surgery itself—are responsible for patients' improvement, he says. He plans next to combine the olfactory cells with stem cells or Schwann cells and is already testing the method in rats. In the meantime, patient testimony is proof that his procedure works, says Huang. "Why do Westerners see it but not believe it?"—DC

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Most Western scientists have given up on the once much-heralded cancer drug endostatin. But in China, biochemist Yongzhang Luo has revived a cheaper, more effective version of the drug.

At age 22, Luo dedicated himself to finding cancer cures after a close friend died of pancreatic cancer. He saw his chance in 1997 when endostatin made its debut by shrinking tumors in mice. A naturally occurring protein fragment, endostatin inhibits blood vessel formation and is thought to cut off the tumor's blood supply.

Luo invested several thousand dollars in EntreMed, the Maryland-based company making the dream drug. But endostatin soon ran into trouble. Clinical trials in people were not convincing, though a few individuals—now deprived of the drug—swear by its effectiveness. EntreMed needed expensive low-yield yeast to produce it. Some reports questioned its effectiveness even in mice (*Mol. Ther.* **5**, 352–359; 2002). In February 2004, EntreMed sold the rights to Children's Medical Center Corporation in Boston and Alchemgen Therapeutics in Houston.

But Luo never gave up. Returning to China in 1999 from a postdoc at Stanford University, he set to work on making endostatin more stable by capping its ends with nine amino acids. The new version, called Endostar, can be produced speedily in bacteria. Luo estimates his production costs are one percent of those for endostatin. "Most Chinese will be able to afford it," he says.

In phase 3 clinical trials in China between 2002 and 2004, 35.4% of 322 individuals with non-small-cell lung cancer who took Endostar with chemotherapy saw their tumors shrink to less than one-half the original size, compared with 19.5% taking chemotherapy alone. In September 2005, China's State Food and Drug Administration approved Endostar. Luo says the drug will also work in other types of cancer, and that an upcoming publication will shed light on its unknown mechanism.

The next step is to get approval from the US Food and Drug Administration to begin trials there. Luo will also have to convince the Children's Hospital that Endostar doesn't infringe on its endostatin patents. "We made significant changes," he says.—DC

When the Bill & Melinda Gates Foundation announced the 43 winners of its Grand Challenges in Global Health, Hongkui Deng was one of just two Chinese scientists who made the list. Deng won \$1.9 million for a proposal to use stem cells to create mouse models for testing HIV and hepatitis C vaccines.

Deng may be one of China's most promising young scientists, but for years, he had little interest in his home country.

In 1989, Deng left China to enroll in a PhD program in immunology at the University of California in Los Angeles. He worked on HIV during a postdoctoral stint with Dan Littman at New York University, but decided the field was too crowded and switched to stem cells instead. In 1998, he became research director of the stem cell company ViaCell in Cambridge, Massachusetts.

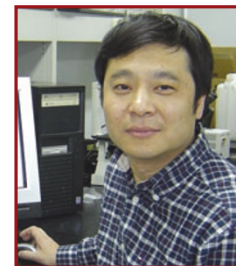
"It looks like in 20 years, China built everything."

Between 1989 and 2000, Deng never once went back to China, and even lost his passport for a while. But when he returned to Beijing in September 2000, "it just gave me a shock," he says. Expecting to see the country he had left behind, Deng was taken aback at the changes. "I realized China is very different than when I left, it looked like it was full of opportunities and

everybody looked very happy," he says. In 2001, Deng came back four more times. And when the Chinese Ministry of Education offered him the Cheung Kong Scholar Professorship at Peking University, he decided to return for good.

He now works on the differentiation of human embryonic stem cells into beta cells to rescue diabetes. He also put his expertise in infectious diseases to good use during the outbreak of severe acute respiratory syndrome (*Nature* **439**, 382–383; 2006) and has published several important papers about the disease.

Things in China have not always been easy, and at times he has felt isolated from scientists in the West, Deng says. "But it's getting better and better," he says. "It looks like in 20 years, China built everything."—AM



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