

New cancer therapy appears promising in pre-clinical trials

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A new method for treating breast cancer is showing early promise in pre-clinical trials.

Researchers in the College of Science at Virginia Tech have developed molecular compounds that, when activated by laser light, have the ability to destroy [cancer cells](#) without many of the side effects of most current therapies.

The research team, led by professors Karen Brewer in chemistry and Brenda Winkel in biological sciences, along with Theralase Technologies, a manufacturer of medical laser devices, has developed a way to eradicate tumors without the harmful side effects of [chemotherapy](#), [radiation](#) or a surgeon's scalpel. The group has built what Brewer calls a molecular machine: It seeks out fast-replicating cancer cells and becomes lethal only when exposed to light.

When combined with a deep-penetrating laser from Theralase, the new molecule could help combat fast-growing cancers, such as breast, prostate, and lung, which up until now have not been able to be penetrated by light therapies.

“This research brings the potential for tremendous impact on a devastating disease, and we are excited to be working with world-class researchers at Virginia Tech to further develop this technology,” said Roger Dumoulin-White, CEO of Theralase.

The treatment recently began Phase II trials as part of a seven-year road map for Food and Drug Administration approval.

Meanwhile, *Popular Mechanics* has named the research and development team a Breakthrough Innovator in its sixth annual awards program. The awards recognize 10 inventors and 10 products poised to change the world in the fields of technology, medicine, aviation, and environmental engineering, among others.

“Our diverse, inspired winners are making the seemingly impossible a reality,” said James B. Meigs, editor-in-chief of the magazine. “The 2010 honorees are the people and products leading the way into the future, and we’re thrilled to recognize their advances. “

The Virginia Tech/Theralase team joins nine others in celebrating the innovator awards. Among the other inventions are soccer balls that generate light and cell phones that diagnose medical conditions.

“This recognition is truly an honor,” Brewer said. “We have been working as a team to develop more effective and less toxic cancer-fighting drugs for the past 18 years. It never ceases to amaze me what this type of team effort can accomplish.”

Brewer said the research has been assisted by students at every level, undergraduates all the way up to postdoctoral Fellows.

“This project is now an exciting example of translational research, collaborating with industry specialists, to take the promise of basic research to clinical trials and beyond.” Winkel said.

More information: *Popular Mechanics*, published monthly by *Hearst Magazines*, is read by 9 million people and engages readers with the latest innovations in science and technology. The award winners will be

highlighted in the November issue, which will be on newsstands Oct. 12.

Provided by Virginia Polytechnic Institute and State University

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