Polymer gel can block toxic leakage

November 18 2005

North Carolina researchers have devised a potentially patentable method to arrest toxic leakages of genetically engineered viruses.

These viruses have plagued attempts to use gene therapy against cancerous tumors, but the problem has been that viruses carrying anti-tumor genes have tended to leak from tumors, proving toxic to other body tissues.

The Duke University researchers have developed a biocompatible polymer that briefly changes from a liquid at 39 degrees Fahrenheit to a gel at body temperatures to block most gene-bearing viruses from being diverted through the blood stream to the wrong targets, the scientists reported in research journals.

"With this method we can reduce the misdirected virus dissemination by a factor of 100 to 1,000 times," said Fan Yuan, an associate biomedical engineering professor at Duke's Pratt School of Engineering who led the studies. "That's enough of a reduction to solve the problem."