

Jamming prostate cancer's transmission

Though most prostate cancers do not metastasize, seeding new tumors throughout the body, those that do become incurable. But data from a new animal study suggest the possibility of one day checking this cancer's potentially lethal spread with a nontoxic, fruit-derived dietary supplement.

The promising agent? Fragments of pectin — the gelling powder used for generations to set jams and jellies.

Three years ago, researchers at Wayne State University in Detroit chopped up branched molecules of citrus pectin to make linear, twiglike arrays of the sugar galactose. The fragments, they found, could bind to lectins, galactose-seeking proteins on the surface of cancer cells.

Ordinarily, lectins foster a cancer cell's adhesion to the blood vessel wall of any organ it attempts to colonize. By binding those lectins to pectin instead, the researchers had hoped to keep circulating cancer cells in the bloodstream until they died or could be eliminated.

And the strategy worked when researchers injected pectin fragments into mice along with cells from a deadly skin cancer (SN: 3/21/92, p.180). Neither untreated pectin nor galactose alone has proved antimetastatic.

Now the Wayne State team has turned its attention to prostate cancer. Why? Research has shown that when prostate cells turn cancerous, they elevate their production of galactose-binding lectins, notes study leader Kenneth J. Pienta, now at the University of Michigan in Ann Arbor.

In the March 1 *JOURNAL OF THE NATIONAL CANCER INSTITUTE*, his team reports that rats drinking pectin-supplemented water developed prostate metastases to the lung at about half the rate of rats drinking plain water. Moreover, Pienta points out, even when metastases did appear in the highest dose group (whose water contained 1 percent by weight of modified pectin), only about one-tenth as many nascent tumors developed as formed in other animals with metastases.

The nontoxic pectin doesn't affect the growth of established tumors. Rather, assays by Pienta's team suggest, pectin fragments indeed thwart metastasis by preventing tumor cells from adhering to blood vessel walls. Most encouraging, Pienta told *SCIENCE NEWS*, "we have demonstrated in our [assays] that the modified pectin appears to block several different types of cancer from adhering to blood vessels — including breast cancer, lung cancer, melanoma, kidney, and others."

"We would therefore predict that this [pectin supplementation] would work for just about any cancer — not just prostate," he says. His group has sent samples of the modified pectin to the National Cancer Institute for additional antimetastasis testing.

In the meantime, Pienta cautions cancer victims against attempting to medicate themselves with pectin. In its off-the-shelf form, he notes, "it's just a dietary fiber and will act like Metamucil. It's only our modification that allows it to be absorbed."

— J. Raloff