Antioxidants may improve cancer drugs, NIH study suggests

May lead to safer chemotherapy

By Nicole Ostrow
Bloomberg News

Antioxidants found in fruits, vegetables and red wine killed cancer cells, including those that are resistant to treatment, in a study that scientists said may lead to more effective tumor fighters.

Researchers from the U.S. National Institutes of Health identified 22 antioxidants that eradicated dividing cells, including two types that showed promise against drug-resistant cancer cells. The study is published online in the Proceedings of the National Academy of Sciences.

Antioxidants, widely used in dietary supplements, are thought to protect cells against a damaging chemical reaction. The study found that antioxidants resveratrol, which is found in red wine, and genistein, found in certain plants, killed rapidly dividing cells and selectively eliminated cancer cells that were resistant to multiple drugs. Antioxidants "are potentially better chemotherapeutic agents than ones currently used," the researchers said in the paper.

"It's a much safer chemotherapy agent if it can be developed," said study author Kyungjae Myung, a senior investigator in the Genetics and Molecular Biology Branch of the National Human Genome Research Institute in Bethesda, Md., part of the NIH, in a March 15 telephone interview. "Currently what we're trying to see is if antioxidants can selectively kill specific cancer cells."

Antioxidants found in fruit show potential for improving chemotherapy treatment. GETTY IMAGES/COMSTOCK IMAGES

Resveratrol, genistein and baicalein are currently used or being studied to treat conditions like heart disease and diabetes, as well as anti-aging. Resveratrol, also found in red grapes, blueberries and cranberries, switches on a class of proteins called sirtuins that may prevent gene mutations and repair DNA damage. London-based GlaxoSmithKline Plc stopped developing a drug, designed to mimic the health benefits of red wine, in 2010 after the compound didn't work well enough in cancer patients and may have worsened kidney damage.

More studies are needed before antioxidants can be used to fight cancer in people, Myung said. Antioxidants in high amounts can damage DNA and kill cells, he said.

"The dose that we used for this treatment in a laboratory setting was way higher than you can get from wine or all those antioxidant tablets or you can consume by eating," said Myung,

Myung said his group is studying to see if antioxidants can kill specific types of cancer cells, including those of the breast and ovary, and if the antioxidants harm just diseased cells or healthy cells, too.