

# An alternative theory on how aspirin may thwart cancer

February 8 2017

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Credit: AI-generated image ([disclaimer](#))

Studies abound that point to a role for plain old aspirin in keeping deadly cancers at bay. While aspirin is not yet part of mainstream treatment for any cancer, it is recommended by the U.S. Preventive Services Task Force for certain adults to help prevent colorectal cancer.

But researchers have puzzled over how exactly the "wonder drug" works to ward off [cancer](#). Most think it has to do with the drug's inflammation-lowering effects.

Now Veterans Affairs (VA) scientists and colleagues in Texas have a new theory, tested successfully in mice and cell cultures. It has to do with [aspirin](#)'s effects on platelets—blood cells that form clots to stop bleeding.

The findings appear in the February 2017 issue of *Cancer Prevention Research*.

Along with clotting, platelets also play a role in forming new blood vessels. That action is normally beneficial, such as when a new clot forms after a wound, and new vessels are needed to redirect blood flow. But the same action can help tumors grow. It's this process that aspirin can interrupt, say the researchers. Their lab tests showed how aspirin blocked the interaction between platelets and cancer cells by shutting down the enzyme COX-1, thereby curbing the number of circulating platelets and their level of activity.

Some of the experiments used regular aspirin from a local drug store. In another phase, the researchers used a special preparation of aspirin combined with phosphatidylcholine, a type of lipid, or fat molecule. The molecule is a main ingredient in soy lecithin. The product, known as Aspirin-PC/PL2200, now in development by Houston-based PLx Pharma, Inc., is designed to ease the gastrointestinal risk associated with standard aspirin.

The enhanced aspirin complex was even stronger against cancer than the regular aspirin. Summarizing their findings, the researchers wrote: "These results suggest that aspirin's chemopreventive effects may be due, in part, to the drug blocking the proneoplastic [supporting new,

abnormal growth, as in cancer] action of platelets and [they support] the potential use of Aspirin-PC/PL2200 as an effective and safer chemopreventive agent for colorectal cancer and possibly other cancers."

Dr. Lenard Lichtenberger, who led the research, has a financial stake in PLx Pharma, the company developing the new lipid-based aspirin under the brand name Aspertec. None of the other authors reported potential conflicts of interest. Lichtenberger is a professor of integrative biology and pharmacology at the University of Texas Health Sciences Center.

The VA leader in the group was Dr. Vinod Vijayan, a research health scientist at the DeBakey VAMC and an expert in platelet biology. He is with the site's Center for Translational Research on Inflammatory Diseases. Vijayan is also an associate professor at Baylor College of Medicine.

The group says they plan to test the lipid-aspirin complex for safety and efficacy in people at high risk for [colorectal cancer](#) in a collaboration with researchers at MD Anderson Cancer Center in Houston.

Meanwhile, they say their results so far "support the use of low-dose aspirin for chemoprevention." They add that Aspirin-PC/PL2200 has "similar chemopreventive actions to low-dose aspirin and may be more effective."

**More information:** Lenard M. Lichtenberger et al. Unlocking Aspirin's Chemopreventive Activity: Role of Irreversibly Inhibiting Platelet Cyclooxygenase-1, *Cancer Prevention Research* (2017). [DOI: 10.1158/1940-6207.CAPR-16-0241](https://doi.org/10.1158/1940-6207.CAPR-16-0241)

Provided by Veterans Affairs Research Communications

Citation: An alternative theory on how aspirin may thwart cancer (2017, February 8) retrieved 30 April 2024 from

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