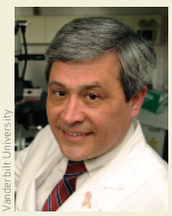
PEOPLE


Vanderbilt University

Carlos L. Arteaga, MD, professor of medicine and cancer biology at Vanderbilt University School of Medicine in Nashville, TN, will be inaugurated as president of the American Association for Cancer Research (AACR) this month at the organization's annual meeting in San Diego, CA. He will serve a 1-year term, succeeding Charles Sawyers, MD.

Arteaga's involvement with the AACR spans more than a decade. He has been a member of its board of directors, served on several committees, and cochaired multiple conferences. He has also served as deputy editor of AACR's *Clinical Cancer Research*.

A principal investigator of a Stand Up To Cancer Dream Team, Arteaga's research interests include oncogene signaling and molecular therapeutics in breast cancer, with an emphasis on targeted therapies and mechanisms of drug resistance. His recent work has focused on the role of neoadjuvant trials to discover molecular biomarkers that inform patient selection in clinical trials.


Duke Medicine

Victor J. Dzau, MD, has been named the next president of the Institute of Medicine (IOM), part of the National Academy of Sciences. Succeeding Harvey Fineberg, he will begin a 6-year term on July 1.

Currently, Dzau serves as chancellor for health affairs at Duke University, president and CEO for Duke University Health System, and professor of medicine at Duke's School of Medicine in Durham, NC. Prior to his tenure at Duke, he was a professor of medicine at Harvard Medical School and chairman of Medicine at Brigham and Women's Hospital, both in Boston, MA.

The IOM provides advice to government policymakers, health professionals, and the public on issues such as health care delivery and quality, cancer prevention and management, and vaccine safety. Dzau was elected to the IOM in 1998.

Study Explains Paradox of Antioxidants in Cancer

Many experts have long thought that antioxidants, such as vitamin E and β-carotene, might lower the risk of cancer because they prevent the buildup of cell-damaging reactive oxygen species (ROS) and other free radicals. However, clinical trials have yielded mixed results, and some have shown that antioxidants may increase the risk of certain cancers in high-risk groups—lung cancer in smokers, for example. The reason for this effect has been unclear.

Experiments conducted in mice that were reported recently in *Science Translational Medicine* show that at least two antioxidants accelerate the progression of early lung tumors—and help to explain why (Sci Transl Med 2014;6:221ra15).

The researchers, led by Martin Bergo, PhD, of the University of Gothenburg's Sahlgrenska Cancer Center, induced lung tumors in mice and then added the antioxidant *N*-acetylcysteine to the drinking water of half of them. Ten weeks after tumor initiation, the animals that consumed *N*-acetylcysteine had a tumor burden that was 2.8 times higher than the controls. Similarly, the researchers tested the impact of two doses of vitamin E, which was added to the animals' food, on tumor progression. Compared with controls, vitamin E supplementation increased tumor burden in a dose-dependent manner. With both antioxidants, the treated mice also had more advanced tumors than the controls.

To assess the impact of antioxidants on ROS, the researchers quantified fluorescence in lung tissue stained with a redox-sensitive probe. They found that the antioxidants reduced ROS and DNA damage, as anticipated, but the antioxidants also reduced the expression of the tumor suppressor protein p53, a finding that was confirmed both in animals and in human lung cancer cell lines.

"When we knocked out p53 in the mice and in human lung cancer cell lines, the antioxidants had no effect," says Bergo.

Although the team did not study the effect of antioxidant supplementation in humans, Bergo notes that the findings have two potential clinical implications. First, for people who have lung cancer or are at high risk for lung cancer, "taking extra antioxidants could be harmful, and it could speed up the growth of that tumor," he says. (Coincidentally, on February 25, the U.S. Preventive Services Task Force recommended against the use of both vitamin E and β-carotene supplements for cancer prevention, saying that they offer no net benefit and that β-carotene increases lung cancer risk in people at high risk for the disease.)

Second, patients with chronic obstructive pulmonary disease (COPD) often take *N*-acetylcysteine to relieve mucus production and improve breathing. Because many COPD patients smoke and may have tiny, undiagnosed lung tumors, "we think the use of *N*-acetylcysteine in this patient group should probably be carefully evaluated," says Bergo.

What remains unclear is whether antioxidants initiate tumorigenesis in healthy individuals; in the study, the mice already had lung tumors when they began consuming high levels of antioxidants. Also unknown is whether other antioxidants, such as vitamins A and C, speed cancer progression.

In addition, "we need to understand if this is limited to lung cancer or if antioxidants actually can accelerate the growth of other tumors, such as malignant melanoma, leukemias, and gastrointestinal tumors, which we're now testing in mice," continues Bergo. "We don't really know anything about that. It's possible that antioxidants will increase the growth of some of those cancers, and it's possible that they will prevent others. We have to do those experiments." ■

FDA Approves PillCam COLON as Follow-up Test

An ingestible, pill-sized camera is now approved to look for polyps in patients who have incomplete colonoscopies. In late January, the U.S. Food and Drug Administration (FDA) cleared PillCam COLON (Given Imaging; Yoqneam, Israel), a capsule equipped with a miniature color video camera on each end, a battery, and LED light source.