



**California Pacific
Medical Center**

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Protein in Common Virus Linked to Aggressive Brain Tumors *Discovery Could Lead to New Anti-viral Treatments for Deadly Cancer*

(San Francisco, February 1, 2008) A protein found in the common human virus cytomegalovirus (CMV) appears to be a key factor in making brain tumors more aggressive and faster spreading. That's the finding of a new study in the journal *Cancer Research*.

The researchers, from the California Pacific Medical Center Research Institute, say the protein known as IE1 plays a number of roles, modifying brain cancer cells in a way that makes them grow more rapidly, and confirming a potential role for CMV in the malignant process of this cancer.

"IE1 delivers a one-two punch to tumor cells. We detect the CMV IE1 protein in nearly all malignant brain tumors, and we find that it can make tumor cells more aggressive by affecting two major pathways," says Charles Cobbs, M.D., lead author of the study. "First, it inhibits two key tumor suppressor proteins in the brain tumor cells; then it promotes the most important growth signaling pathway in the tumor itself. By modulating these cellular pathways, this viral protein makes the tumor cells more aggressive."

Dr. Cobbs first made the discovery that CMV was associated with malignant brain tumors in 2002. Now, by identifying the mechanism that helps CMV fuel tumors, the researchers say it could speed up the search for new treatments.

"This opens up the door to the possibility of treating the malignant brain tumors with an antiviral drug, a simple oral medication that could dramatically help patients fight off a previously fatal cancer," says Liliana Soroceanu, Ph.D., M.D., co-author of the study.

High grade glioma tumors are the most common form of brain cancer. They are difficult to treat because surgical cure is not an option, and radiation and chemotherapy have only limited success against them. As a result the tumors are typically fatal within a year, claiming some 20,000 lives in the U.S. every year.

CMV is a common virus, causing a persistent infection in 50 to 80 percent of all Americans. Because it often produces few symptoms, most people are unaware they are infected. In normal, healthy individuals CMV poses few risks, but it can pose serious health problems for people with compromised immune systems such as people with HIV/AIDS, organ transplant recipients, and pregnant women and their fetuses.

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At San Francisco's California Pacific Medical Center, we believe in the power of medicine. We research the most up-to-date treatments, hire the most qualified individuals, and practice the most modern, innovative medicine available. We deliver the highest quality expert care, with kindness and compassion, in acute, post-acute and outpatient services, as well as preventive and complementary medicine. But we also believe that medicine alone is only part of the solution. That's why we look intently at each individual case and treat the whole person, not just the illness. It's why we go beyond medical care and provide our patients with things like disease counseling, family support and wellness treatments. As one of California's largest private, community-based, not-for-profit, teaching medical centers, and a Sutter Health affiliate, we are able to reach deep into our community to provide education, screening and financial support in some of the city's most underserved neighborhoods. Because medicine can transform a body. But going beyond medicine can transform a life. www.cpmc.org

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