Treatment could halt cancer spread

Researchers from Emory University and Georgia Tech have designed a new treatment method that appears to halt the spread of cancer cells into normal brain tissue in animal models.

Treating invasive brain tumors with a combination of chemotherapy and radiation has improved clinical outcomes, but few patients survive longer than two years after diagnosis. The effectiveness of treatment is limited by the tumor's aggressive invasion of healthy brain tissue, which restricts chemotherapy access to the cancer cells and complicates surgical removal of the tumor.

The researchers treated animals possessing an invasive tumor with a vesicle carrying a molecule called imipramine blue, followed by conventional chemotherapy. The tumors ceased their invasion of healthy tissue and the animals survived longer than animals treated with chemotherapy alone.

Results show that imipramine blue stops tumor invasion into healthy tissue and enhances the effectiveness of chemotherapy, which suggests that chemotherapy may be more effective when the target is stationary, says Ravi Bellamkonda, a professor in the Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University.

Seeing Through Camouflage.

Georgia Health Sciences University researchers want to help the Army better camouflage its soldiers and break the enemy's efforts to hide. The researchers are using a relatively new technique they developed to teach civilian volunteers to break camouflage. They flash a series of camouflage pictures on a computer screen, providing about a half second after each to spot, for instance, a face in a sea of mushrooms. A green light signals a correct answer and a red light a wrong one. An hour into the session, two of the cadets scored 100 percent of their visual analysis schoolwork, and the researchers think the Army's current camouflage might be easier to break than the one they are testing. As part of the Office of Naval Research's $3 million, three-year project, they want to optimize early detection and light up the field of view. The researchers are especially interested in blood flow, cell activity, and other first-order behavioral and physical signals that the brain and other organs emit when the body is under stress.

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