New pathway and drug targets in HER2-positive breast cancer

Just as the AIDS "cocktail" drugs target multiple drug targets to deliver a knock-out blow to the deadly virus, so too might future anti-cancer cocktails target multiple, highly specific drug targets in breast cancer pathways. The key is knowing precisely which targets hit in which cancers. In the past, this has been a challenge.

Newly reported experiments by Professor Nicholas Toros and his team have revealed a previously unknown pathway activated in HER2-positive breast cancer, a highly lethal form of the disease. The pathway, they discovered, contains only two potentially powerful drug targets. If you can use combination approaches, hitting multiple targets within the cell to reduce the activity of each, you see a synergistic effect between them, you may be able to overcome some of their harmful effects in HER2-positive cancer, and perhaps also resistance," says Toros. "That is our goal."

Important awards for Vokac, Gann

Within weeks of the 12th Commencement of the Watson School of Biological Sciences (WSBS) last month, two faculty members received significant awards. Associate Professor Chris Vokac was honored by the American Association for Cancer Research (AACR) with its Outstanding Achievement Award. Alex Gann, WSBS Dean, was awarded a 2015 Guggenheim Fellowship in science writing. Read more about Vokac and Gann.

Research briefs: cancer & schizophrenia

The gene called Pten is one of the master control genes of the body's natural tumor suppressors. When it's mutated or missing, as often occurs in cancer, growth signals affecting cells can get stuck in the "on" position, enabling cells to proliferate out of control. Led by Associate Professor Lloyd Tadmor, a CSHL team has published new research explaining precisely how the protein encoded by PTEN works - how it's recruited to particular locations in our cells where pro-growth signals need to be shut off. Read more to find out how this research expands the previously held theory of how PTEN works.

Disruptions to a brain circuit that runs between the prefrontal cortex and the thalamus have been associated with schizophrenia, but the mechanism has not been clear. Now, Associate Professor Bo Lu and colleagues at CSHL have discovered an inhibitory connection between these brain areas in mice that can control the timing of information flow between them. This may help explain what goes wrong in schizophrenia and indicate a path to new treatments. Read more.