Spotlight

By Caroline Seydel

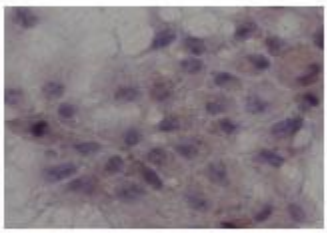
Vitamin K Gives a Boost to Anti-Cancer Drug Sorafenib

Wei *et al.*
http://doi.wiley.com/10.1002/ijc.25498

Patients with liver cancer frequently have other liver disease, such as cirrhosis, making the organ unable to withstand harsh treatments. Researchers, therefore, are eagerly searching for effective treatments that won't harm a fragile liver. Wei et al. found that combining a known anticancer agent with K vitamins can boost the agent's efficacy at lower doses.

Sorafenib is a multi-kinase inhibitor that induces apoptosis in liver cancer, as well as other cancers, but because of its many toxicities, the dosages often need to be lowered. Naturally occurring, non-toxic K vitamins also have been shown to induce apoptosis in liver cancer. Wei et al. considered that combining these two therapies could improve their activity, thus reducing the toxic side effects of sorafenib.

First, the researchers evaluated the duo's effect on cancer cell growth. The two agents together inhibited cell proliferation much more than either could on its own. When they looked at apoptosis, they found that neither agent alone induced cell death at the concentrations tested, but together, they prompted nearly half the cells to kill themselves. Vitamin K, then, appears to enhance the activity of sorafenib, potentially allowing patients to take the drug for longer periods and extend survival.



Cells stained with TUNEL to show apoptosis. Treatment with both Vitamin K + sorafenib induced apoptosis more than either alone."