A single therapy slows multiple cancers

January 23 2012

Targeting a single protein can help fight both breast cancers and leukemias, according to two reports published online on January 23 in the *Journal of Experimental Medicine*.

The single protein is HSP90, which acts as a chaperone to protect other proteins in the cell.

A team led by Ute Moll at the University of Göttingen in Germany found that blocking HSP90 activity rendered normally protected proteins vulnerable to attack and destruction. One of these proteins—called migration inhibitory factor—drives the growth of breast tumors. HSP90 inhibitors slowed the growth of MIF-expressing breast tumors in mice but had little effect on tumors lacking MIF.

HSP90 inhibitors also look promising for certain forms of leukemia, according to a study by David Weinstock and coworkers at the Dana-Farber Cancer Institute. They showed that HSP90 inhibitors slowed the growth of leukemias driven by hyperactive versions of the enzyme JAK2, many of which become resistant to JAK2-blocking drugs. The HSP90 inhibitors delayed the growth of resistant leukemia cells in mice.

Together these studies suggest that HSP90 may represent a therapeutic target in many cancers.

More information: Schulz, R., et al. 2012. J. Exp. Med. doi:10.1084/jem.20111117
Weigert, O., et al. 2012. J. Exp. Med. doi:10.1084/jem.20111694

Provided by Rockefeller University