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Researchers identify new method to selectively kill metastatic melanoma cells

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(PhysOrg.com) -- An international team of researchers has identified a new method for selectively killing metastatic melanoma cells, which may lead to new areas for drug development in melanoma - a cancer that is highly resistant to current treatment strategies.

Researchers from Virginia Commonwealth University, in collaboration with a team of researchers led by Maria S. Soengas, Ph.D., with the Spanish National Cancer Research Center in Madrid, Spain, found that activation of a specific molecular pathway triggers melanoma cells to begin a process of self-destruction - through self-digestion and programmed cell death. The study is published in the August 4 print issue of the journal *Cancer Cell*.

"The present research provides a path that could lead with further studies and a phase I clinical trial for safety to the development of a strategy that reenergizes the immune system to destroy this highly aggressive cancer," said lead investigator at VCU, Paul B. Fisher, M.Ph., Ph.D., the first incumbent of the Thelma Newmeyer Corman Endowed Chair in Cancer Research with the VCU Massey Cancer Center.

According to Fisher, the pathway that is activated involves the melanoma differentiation associated gene-5, or mda-5, a gene initially cloned in Fisher's laboratory, that activates a protein called NOXA that is involved with programmed cell death. This series of chemical reactions results in induction of a cell-killing process involving self-digestion that leads to programmed cell death specifically in melanoma

cells. Fisher said that mda-5 is a key regulator of innate immunity that induces interferon beta production limiting replication of specific pathogenic viruses.

Source: Virginia Commonwealth University (news : web)