

## Viral protein mimic keeps immune system quiet

January 20 2011

In a new paper published Jan. 21 in the journal *Science*, a team of researchers led by Microbiology and Immunology professor Blossom Damania, PhD, has shown for the first time that the Kaposi sarcoma virus has a decoy protein that impedes a key molecule involved in the human immune response.

The work was performed in collaboration with W.R. Kenan, Jr. Distinguished Professor, Jenny Ting, PhD. First author, Sean Gregory, MS, a graduate student in UNC's Department of Microbiology and Immunology played a critical role in this work.

The virus-produced protein, called a homolog, binds to the cellular protein that normally triggers an inflammatory response, a key immune system weapon for fighting viral infection. However, the homolog lacks a key part of the <u>cellular protein</u> that triggers the inflammation process. Inflammasome activation leads to the production of proinflammatory cytokines and eventual cell death.

Damania compares the homolog's action to what can happen when completing a jigsaw puzzle. "Sometimes there will be a piece that 'almost' fits into an available space, but because it's not an exact fit, leaving it there will keep you from completing the puzzle. The viral homolog gums up the works, preventing the formation of a large complex called the inflammasome, and keeping the cell's immune response from deploying."



According to Damania, a cell's response to a viral invader is to commit suicide. The cells die rather than spread the virus, which uses the cell by hijacking its <u>genetic machinery</u> to produce more virus. Kaposi sarcoma virus' ability to evade the body's immune system helps it lie dormant and persist in the body over a lifetime.

Both researchers are members of UNC Lineberger Comprehensive Cancer Center. Dr. Damania studies the Kaposi's sarcoma virus, which is known to cause certain types of human cancer, because it can infect cells and lie dormant without triggering cellular death. Virus-infected <u>cells</u> then proliferate, and can give rise to cancer.

Provided by University of North Carolina School of Medicine

Citation: Viral protein mimic keeps immune system quiet (2011, January 20) retrieved 4 May 2024 from <u>https://medicalxpress.com/news/2011-01-viral-protein-mimic-immune-quiet.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.