What role do processing bodies play in cell survival and protection against viral infection?

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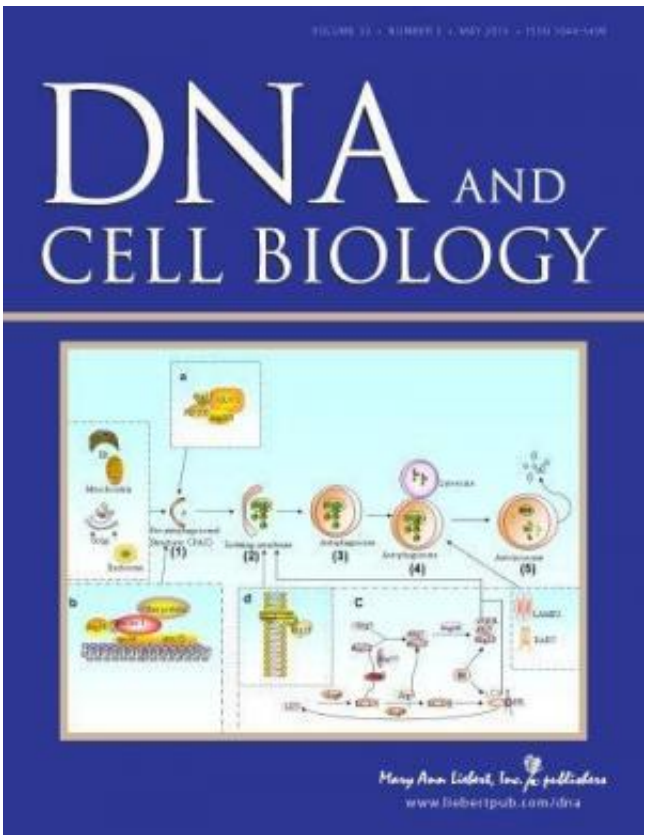

As scientists learn more about processing bodies (PBs), granules present within normal cells, they are unraveling the complex role PBs play in maintaining cellular homeostasis by regulating RNA metabolism and cell

signaling. Emerging research is revealing how virus infection alters PBs to enhance viral replication and how, in turn, PBs are able respond and limit a virus's ability to reproduce. This novel mechanism allows PBs to contribute to the body's immune defenses, as described in an article in *DNA and Cell Biology*.

Asit Pattnaik and Phat Dinh, University of Nebraska-Lincoln, explore the growing knowledge base on PBs and their components, and how they interact with viruses. The authors review the literature and discuss the positive and negative consequences of PB-virus interactions and the potential implications of the role of PBs in RNA processing, cell signaling and survival, and immune function.

In the article "Manipulation of Cellular Processing Bodies and Their Constituents by Viruses," Pattnaik and Dinh describe the mechanism by which viruses may alter the composition of the PBs to benefit viral RNA replication at the expense of host cell homeostasis.

"This brief review highlights one of many important cellular processes that are subverted by viral infection," says Carol Shoshkes Reiss, PhD, Editor-in-Chief, Departments of Biology and Neural Science, New York University, NY. "The sequestration of RNA in the cytoplasm is an under-appreciated regulatory pathway."

More information: The article is available free on the *DNA and Cell Biology* website at http://www.liebertpub.com/dna.

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