

Coenzyme May Support Cell Defense

(NAPS)—As scientists are learning more about COVID-19 and how it affects the body, they are also looking for ways to support the innate immune response to infection. While more research is needed, preclinical studies lay a foundation of science to inform future human studies.

A recently published preclinical study focused on levels of a coenzyme called nicotinamide adenine dinucleotide (NAD⁺) in cells and animal tissue infected with coronavirus, specifically



In recent preclinical study in animal cells researchers have uncovered a new way to understand cells' innate response to the novel coronavirus. To gain a full picture, more research is needed.

SARS-CoV-2 and lung tissue from a COVID-19 cadaver. The results revealed that NAD⁺ may play a key role in cellular defense mechanisms.

The researchers observed how SARS-CoV-2 impacted cellular NAD⁺ levels and how the virus triggered the infected cells to seek out a cellular nutrient called nicotinamide riboside (NR) in an attempt to replenish the NAD⁺ levels that had dropped due to infection.

In a separate set of experiments, the researchers provided NR to coronavirus infected mouse cells and showed that viral replication was significantly reduced compared to a control.

The researchers concluded that coronaviruses disturb the NAD⁺ system, and increasing cellular NAD⁺ pools with NR may aid cells' defense during infection.

What does it mean?

These scientists, from the University of Iowa, University of Kansas, and Oregon Health & Science University, will continue to study how cells use NAD⁺ while mounting a defense against coronaviruses such as SARS-CoV-2, which causes COVID-19.

As the science moves forward on COVID-19 and NAD⁺, additional studies will need to be done to understand the role of NAD⁺ in immune stress in humans.

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