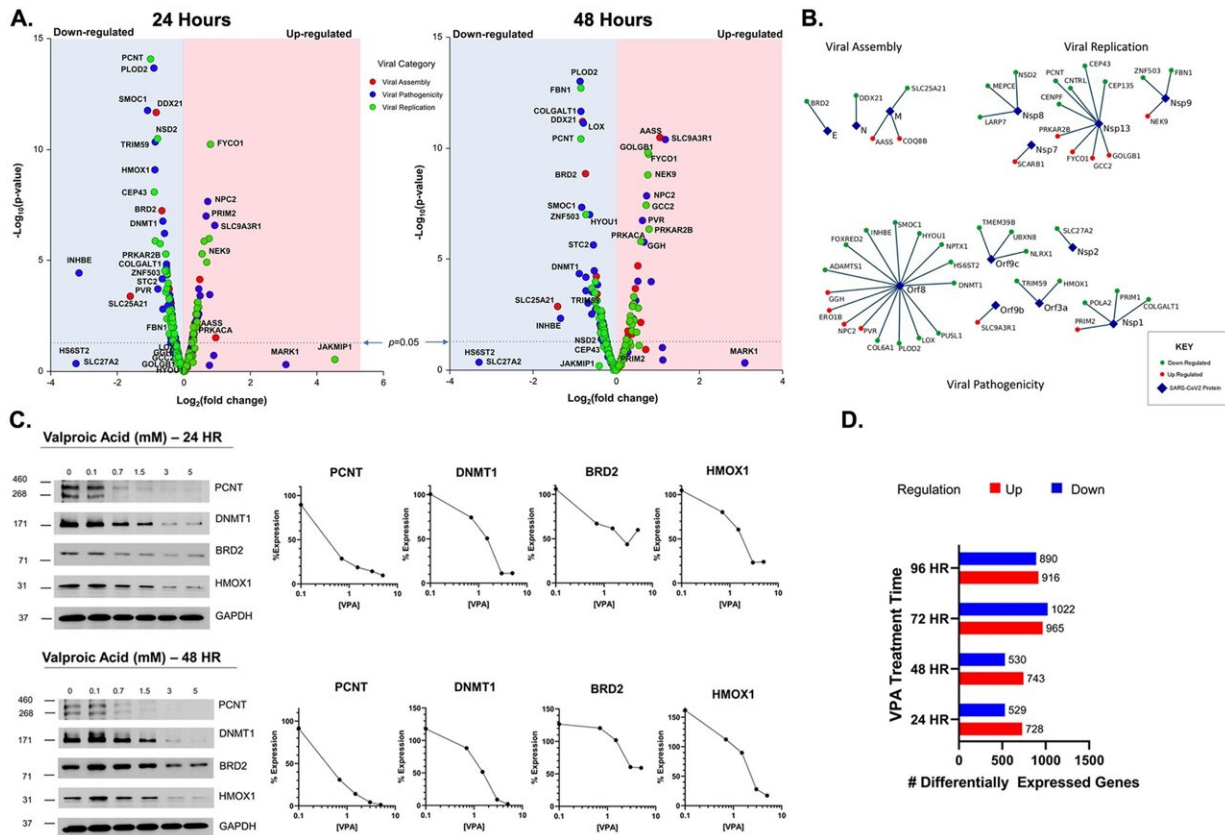


Combined anti-seizure drug and omega-3 may lower COVID-19 risks

September 9 2024, by Claire Kowalick



Valproic acid use is associated with diminished risk of contracting COVID-19, and diminished disease severity: Epidemiologic and in vitro analysis reveal mechanistic insights. Credit: *PLOS ONE* (2024). DOI: 10.1371/journal.pone.0307154

Ronald Rodriguez, MD, Ph.D., professor of medical education and urology at Joe R. and Teresa Lozano Long School of Medicine at The University of Texas Health Science Center at San Antonio (UT Health San Antonio), has discovered that the combination of valproic acid and docosahexaenoic acid (DHA) may reduce the risk of contracting COVID-19 and lessen its severity, according to a study published in August.

The research [appears](#) in the journal *PLOS ONE*.

Valproic acid is a common anti-seizure medication, and DHA is a type of omega-3 fatty acid known to improve brain and heart health.

When the COVID-19 pandemic began in 2020, Rodriguez received a [kidney transplant](#), raising his own concerns about being at high risk for infection and its complications. Rather than sitting back at home, the urologist shifted his focus and investigated potential treatments for COVID-19. Rodriguez drew from his background in virology and [gene therapy](#) and explored an effective and accessible solution to fighting the virus.

Rodriguez's previous adenoviral gene therapy research in [prostate cancer](#) had led him to explore the antiviral potential of [valproic acid](#). Approved by the U.S. Food and Drug Administration, valproic acid showed promise in preventing the COVID virus from replicating, but initial doses proved potentially toxic.

"A combination of a nutritional supplement and an anti-seizure drug in the right ratios with the right timing could be very profound in inhibiting the development of and replication of COVID and more importantly, because of the way it works, there are a couple of thousand genes that are affected," Rodriguez said.

A review of electronic medical records data from more than 3 million patients showed those taking valproic acid were less likely to develop COVID-19, and those patients who tested positive for COVID-19 were less likely to be admitted to the emergency room, inpatient hospital and intensive care unit (ICU).

"Valproic acid in combination with DHA strongly activates ancient antiviral pathways against large classes of viruses in the cells that are usually repressed by viruses, like coronaviruses. When they get in, the first thing they do is repress many of these antiviral pathways. This combination drug overcomes that and then turns it on to a strong extent and those ancient pathways are able to rid themselves of the virus," Rodriguez said.

Rodriguez and his research team envision usage of the valproic acid combo as a short-term, preventive treatment to avoid getting COVID-19 or to lessen its severity, like how a Z-Pak, a short course of azithromycin, diminishes a bacterial infection.

For older adults, people who have health issues or those who are immunocompromised, this discovery could allow them to return to their normal routine and experience things they have not been able to since COVID began.

Rodriguez sees the study's results as an opportunity for the development of low-cost alternatives for treatment around the world where other medications are not available.

More information: Amanda Watson et al, Valproic acid use is associated with diminished risk of contracting COVID-19, and diminished disease severity: Epidemiologic and in vitro analysis reveal mechanistic insights, *PLOS ONE* (2024). [DOI: 10.1371/journal.pone.0307154](https://doi.org/10.1371/journal.pone.0307154)

Provided by University of Texas Health Science Center at San Antonio

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