

Singapore explores link between Zika virus infection and birth defects

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Zika virus infection hijacks glucose metabolism for its own good and to the detriment of infected fetuses



The Zika virus shunts carbon atoms away from the important glucose metabolism pathway in infected fetuses, leading to a cascade of events that significantly impact foetal development. But giving pregnant mothers a readily available supplement could protect their babies, say the Singapore scientists who made this discovery.

The researchers from Duke-NUS Medical School and their collaborators published their findings recently in the journal *Cell Reports*.

Using an animal model conducted according to the National Advisory Committee for Laboratory Animal Research (NACLAR) guidelines, the team discovered that supplementing cells and also pregnant mice with a downstream compound in the glucose metabolism pathway, called pyruvic acid, could restore mitochondrial function and reduce the impact of Zika virus infection on foetal development.

Further investigations are needed to understand what doses of pyruvic acid pregnant women may have to take to protect fetuses from these adverse developmental impacts. The team is also interested in further understanding how the Zika virus manipulates glucose metabolism and will investigate whether dengue viruses, which are genetically related to the Zika virus, also manipulate glucose metabolism in the same way.