



## Nicotinamide, Folic Acid and Derivatives as Potent Inhibitors of Inflammatory Factors against Novel Corona Virus Infection

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A novel coronavirus designated as SARS-CoV-2 in February 2020 by World Health organization (WHO) was identified as main cause of SARS like pneumonia cases in Wuhan city in Hubei Province of China at the end of 2019. This been recently declared as Global Pandemic by WHO. There is a global emergency to identify potential drugs to treat the SARS-CoV-2. Currently, there is no specific treatment against the new virus. There is an emergency to identifying potential antiviral agents to combat the disease is urgently needed. An effective and quick approach is to test existing antiviral drugs against COVID-19. Patients affected with Novel coronavirus had shown severe respiratory inflammatory burst which includes sever cytokine and lymphocyte over responses. Particularly interleukins swarm like IL8, IL2, IL6 and other inflammatory triggering factors. Nicotinamide also known as Vitamin B3 a derivative of amide had a powerful anti-inflammatory properties which includes inhibition of free radicals scavenging, Nitric oxide synthase activity. Niacinamide also had shown inhibitory property against Poly (ADP ribose) polymerase (PARP), a Nuclear DNA binding enzyme to repair and response during genotoxic stress. PARP activation leads to NAD<sup>+</sup> depletion leading slowing down of cell metabolism and leading cell death. Genome wide analysis and open reading frames of Novel Coronavirus had shown many gene codes for Poly (ADP ribose) polymerase (PARP) which indicates Novel coronavirus uses host enzymes using its genetic code to infect and replicate. Nicotinamide also suppresses the MHC class II expression and ICAM-1 expression leading to reduction in inflammatory factors production. Proinflammatory cytokines like IL-1 $\beta$ , IL-8, IL-6, IL-2 and TNF $\alpha$  plays key role in respiratory outburst during Coronavirus infection. Use of Nicotinamide in patients suffering from Coronavirus infection may prevent Respiratory outburst by inhibiting Cytokine production. We propose use of FOLIC ACID, Riboflavin and zinc supplements as a palliative treatment for patients infected with Coronavirus in order to control inflam-

matory factors production and viral replication. We also propose use of anti-inflammatory drugs against Proinflammatory cytokines like IL-1 $\beta$ , IL-8, IL-6, IL-2 and TNF $\alpha$  [1-4].

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