

Development of oral COVID-19 vaccine from attenuated plant covid-19 virus

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Abstract:

Human trials of COVID-19 vaccine have shown a lot of adverse effects, which created a questionmark on vaccines development and emergency approval. In fact, more than 170 companies are working day and night to develop an effective and safe COVID-19 vaccine, which can minimize the adverse effects and simultaneously can improve the adaptive immunity. One such potential vaccine candidate is Medicago's plant based COVID vaccine, which uses the leaves of a tobacco family plant to produce the spike protein, which is one of the major surface proteins of the SARS CoV-2. It's been the major target for most of the researchers to deactivate the surface proteins of coronavirus, such that the virus can't enter to the cell. Medicago has been started their clinical trial journey to prove their initial success on an effective vaccine. Many countries have spent billions to develop a safe and effective vaccine to eradicate this global pandemic. Medicago's plant based covid-19 vaccine relies on the principles for the development of one of the major spike proteins from a plant from tobacco family. It has been reported that corona virus affect the tobacco plant like Rhododendron sp. and vine maple sp. bushes. As Rhododendron sp. is toxic for human beings, so it can't be considered for an oral vaccine, whereas the Vine maple sp. is perfectly fit to develop an oral vaccine for SARS-CoV-2.

Answering many questions scientists have explained that only animal kingdom does not get affected by the virus, plants too get affected by viruses. Thus current hypothesis is targeting oral vaccine from non-toxic plant of tobacco family such as Vine maple spp. A potential oral vaccine for SARS-CoV-2 can be more challenging than the injectable vaccine as it prepares the mucus membrane and upper airway better than possibly injectable vaccine. The science behind choosing plants for the development of an oral vaccine is the evidence that SARS-CoV-2 affects the plants of tobacco family as reported by Medicago. Such as Rhododendron spp. & Vine maple spp. As plants use their own chemical immune system to fight against the viruses of course, further researches is required for the development of this oral live attenuated covid vaccine.

Biography:

Mr. Utkalendu Suwendusekhar Samantaray has been completed his master's in biotechnology from MITS School of biotechnology affiliated under Utkal university. He has worked on many research papers including biochemistry, anti-oxidant development, plant growth microbes, nanotechnology, etc. His major field of research includes phytochemicals, probiotics, cancer genomics, in-vitro production of therapeutics etc.