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**Genetic variants and mutations of SARS-CoV-2, vaccines and non specific
immunity**

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Abstract

The world is facing the biggest problem in history, namely the deadly Corona virus, which has infected millions of people worldwide and caused a health crisis despite all preventive measures, because it has proven its strength with its widespread and new transformations from time to time. In time, this has led to the emergence of many mutations, in the context of 'variants of concern', that impact virus characteristics, including transmissibility and antigenicity, probably in response to the changing immune profile of the human population, that are difficult to control because it affects all age groups and is transmitted through close contact with infected people, especially those with chronic diseases and with other risk factors such as: socioeconomic level, lifestyle, diet, obesity and physical activity, it is an opportunistic disease that alters all immune responses. Despite all the international scientific studies, this virus is still mysterious, which has led to the inability to produce a drug that reduces its risk and cures it, but the discovery of some vaccines has given hope of defeating it; nonetheless, it is crucial that surveillance of genetic and antigenic changes in the global virus population is done alongside experiments to elucidate the phenotypic impacts of mutations.

Keywords: *COVID-19, pandemic, mutations, vaccine, immunity, risk factors.*

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