



Infection-Immunity Competition: A Simple Model for Illustrating the Background of Individual Response on Herd Immunity

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Abstract:

For achieving herd immunity, the proportion of individuals who are immunized, and the proportion of susceptible individuals are normally regarded as the key factors. Here, it is discussed that the immunity is not a yes/no decision in all cases, but a limited (relative) immunity should be kept in mind. This effect would cause a dependence of infection from the level of immunity and the strength of single-infection impact events (virus load). As a result, a stepwise enhancement of low-level immunity could be achieved in case of infection contacts at low concentrations of infectious particles. This behavior is probably important for airborne infection paths. Therefore, it might play a role in the case of the recent SARS (new coronavirus) pandemic and could have a strong effect on herd immunity.



Biography:

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