

Title:Important of Glycan and Lectins in Viral Infection: Review paper

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ABSTRACT:

Many emerging and re-emerging viruses are evolved as an outbreak for their novel characteristics towards to the host cell. Both viral surface layer and host cell membrane layer contain some significant molecules such as glycans a modifying carbohydrate found in lipid and protein whereas lectins protein require it as a ligand. Virally encoded lectins often possess characteristic glycan binding regions and recognize specific portions of protein- and lipid-linked glycans similar to animal lectins whereas viruses can benefit from interactions between glycans and glycan-binding proteins lectins.Both glycan and lectins are essential for degradation of outer viral activity but the interactions between the two biomolecules sometimes benefits the virus to infect the host. However, specific viral outbreak present the modification of these conjugated molecules by shake of avoiding host immune cells activity.Spike protein may found outer surface of the viral layer essential for interacting with host cell membrane to invade. For example, COVID-19 contain two major domains S1 and S2 in their spike protein for viral entry, where topology of the S1-NTD β-sandwich core is identical to that of human galectins. As host proteins, galectins are not recognized by the host immune system. Lectins mediate adhesion of microorganisms to host cells or tissues, which is a prerequisite for infection while lectin-deficient microbial mutants are often unable to initiate infection.Glycans recognized by microbial surface lectins have been shown to block the adhesion of bacteria to animal cells in vitro and in vivo, and thus may protect animals against infection by such microorganisms whereas viruses can benefit from interactions between glycans and glycan-binding proteins. The interaction with glycosaminoglycans often constitutes the first contact between a virus and its target cell and typically increases infection efficiency. Prohibiting viral invation before than viral replication can be promising benefits in therapeutic sectors.

Keyword*: Glycans, Lectins, Viral infection, Viral-host cell interaction .*

Biography

Shah Rucksana Akhter Urme has completed her Bsc in Biotechnology and Genetic Engineering and continue her Msc.in Biochemistry from Sylhet Agricultural University .She has attended National and International Conferences. She is involving several research sectors about pathogenic bacteria,bioremediation,natural antibiotics,vaccination strategies etc. both in wet lab and dry lab and awerded by best prizes from national and international conferences and competitions related to life science. She is very passionate about hidden secrete of life and resolving global problems with scientific research.

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