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VLPs display technology a step towards efficient vaccination platform using stable insect cell line and silkworms

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Vaccine development requires active antigenic regions that can be easily detected by immune system. RSV-gag protein can easily self assemble and folds to form VLPs on plasma membrane. VLPs carry no genetic materials inside hence cannot propagate in any host. Utilizing this property VLPs were expressed in a stable insect cell line and silkworms and approximately 0.78 mg and 6.4 mg VLPs of considerable quality were purified respectively. In order to develop this platform for vaccination, HA from Influenza A/Puerto Rico/8/34 virus (H1N1) was co-expressed and another unique stable insect cell line called D6/F6 was isolated which produced VLPs displaying HA. The presence of HA on VLPs was confirmed under TEM using 10 nm Anti-IgG gold colloids and by heamagglutination assay using the rabbit reticulocytes. This cell lines displays complete HA with C-terminal embedded in the lipid layer surrounding the VLPs and the head N-terminal exposed free. The globular head region is known to contain four antigenic sites which shall be targeted for vaccination in future.

Biography

Vipin Kumar Deo has completed his Ph.D at the age of 29 years from Shizuoka University and postdoctoral studies from Wyoming University. He is an Assistant Professor at Shizuoka University on Special deputation under Double Degree Programme. He has published in reputed journals and serving as an editorial board member of repute.