

## A New Range of Chitosan Based Nano-antiviral Agents

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**ABSTRACT** The current study involves the synthesis of fourteen analogs of oligochitosan and their screening for antiviral potential against human immunodeficiency virus (HIV), respiratory syncytial virus (RSV) and Coxsackie virus. The synthesized oligochitosan analogs were characterized by nuclear magnetic resonance (NMR) and FTIR techniques. HIV-1 p24 ELISA was performed using HIV-1 p24 antigen capture assay in order to estimate the viral infectivity loss. It was observed that sulfated oligochitosan was devoid of antiviral activity as compared to oligochitosan UN102 analog. The rest of UN102 analogs which include N-thiol (UN105), N-glutaryl (UN106), N-Azido (UN111) and N-phthaloyl (UN114) and N-citric analog (UN117) exhibited antiviral activity against HIV. The UN102 also decreased viral infection caused by RSV. In addition, UN102 was found to bind Coxsackie virus, which causes autoimmune myocarditis. The findings were of great interest to proceed for the development of novel antiviral agents.