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# FUNCTIONAL ROLE OF NONSTRUCTURAL PROTEINS IN RESPIRATORY SYNCYTIAL VIRUS MEDIATED HOST IMMUNE EVASION

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The genome for Respiratory Syncytial Virus (hRSV) encodes for eleven proteins through ten distinct genes. Two proteins of interest are called Nonstructural protein 1 (NS1) and Nonstructural protein 2 (NS2). These proteins have been shown to evade the human immune system through inhibition and suppression of the signal interferon pathway that, in response to viruses, produces proteins that target the expression of antiviral genes through secondary pathways such as the JAK/STAT pathway. Specifically, NS1 and NS2 have been linked to lower levels of STAT2, which is a key signaling protein in the type 1 signal interferon pathway. The degradation of STAT2 occurs through cellular ubiquitination, a type of degradation accomplished by E3 ligase complexes. Recently, our collaborators have identified several host factors that interact with hRSV NS2. I plan to use *in vitro* pull down and immunoprecipitation studies to validate these hits. Collaborative studies within our group and elsewhere will test the functional significance of these integrators once we validate direct binding. The hypothesis for this study centers on the idea that the direct interactions between hRSV NS2 and host factors modulate the host immune response.