RESPONSE OF NKX2.1GFP+ RESPIRATORY PROGENITOR CELLS TO RHINOVIRUS INFECTION.

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Aim To examine the response of NKX2.1+ respiratory progenitors following exposure to human rhinovirus 1B (HRV1B) **Methods** Day 10 NKX2.1-GFP+ FACS purified respiratory progenitors were exposed to human rhinovirus 1B (HRV1B) at multiplicity of infection (MOI) 12 for 24 hours. Gene expression of low density lipoprotein receptor (LDLR) for minor group HRV was assessed pre- and post- infection. Viral replication and inflammatory cytokine production were also measured using HRV1B Real Time PCR Kit and specific ELISA kits. The propagation propensity of infected progenitors was assessed by collecting and freeze-thawing infected NKX2.1-GFP+ cell pellets followed by their inoculation onto a HRV1B susceptible cell line, MRC5. **Results** Immunohistochemistry and gene analysis showed positive expression for the HRV1B receptor, LDLR which increased over 1.5 fold post-HRV1B infection. NKX2.1-GFP+ cells were also more susceptible to HRV1B infection that other epithelial cells lines which resulted in ~2 fold increase in IL-6, IL-8 and IL-1β cytokine production. Finally, NKX2.1+GFP- cells that were infected with virus are able to retain live virus which could be propagated to other susceptible cells. **Conclusions** Although NKX2.1+ progenitors do not expressed definitive respiratory markers, they express the receptor for viral attachment and able to respond in an inflammatory manner and propagate live virus. It thus presents as a potential model to assess pre-committed respiratory progenitor cells to viral infection.

Conflict of Interest: None
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