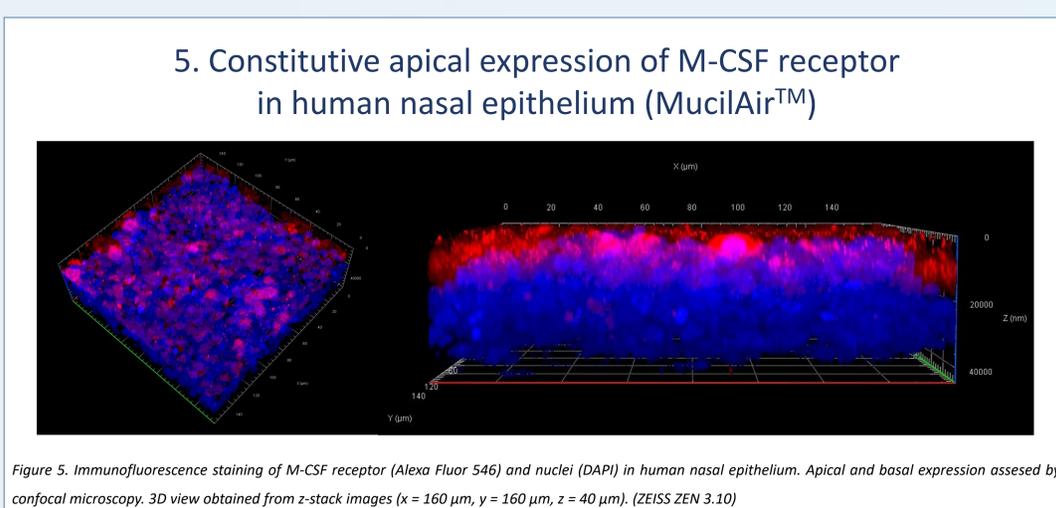
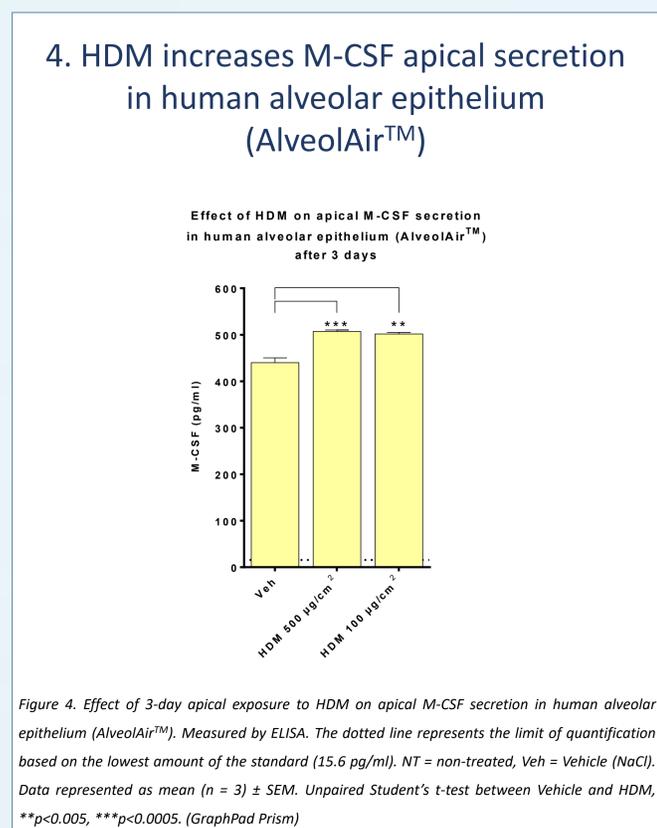
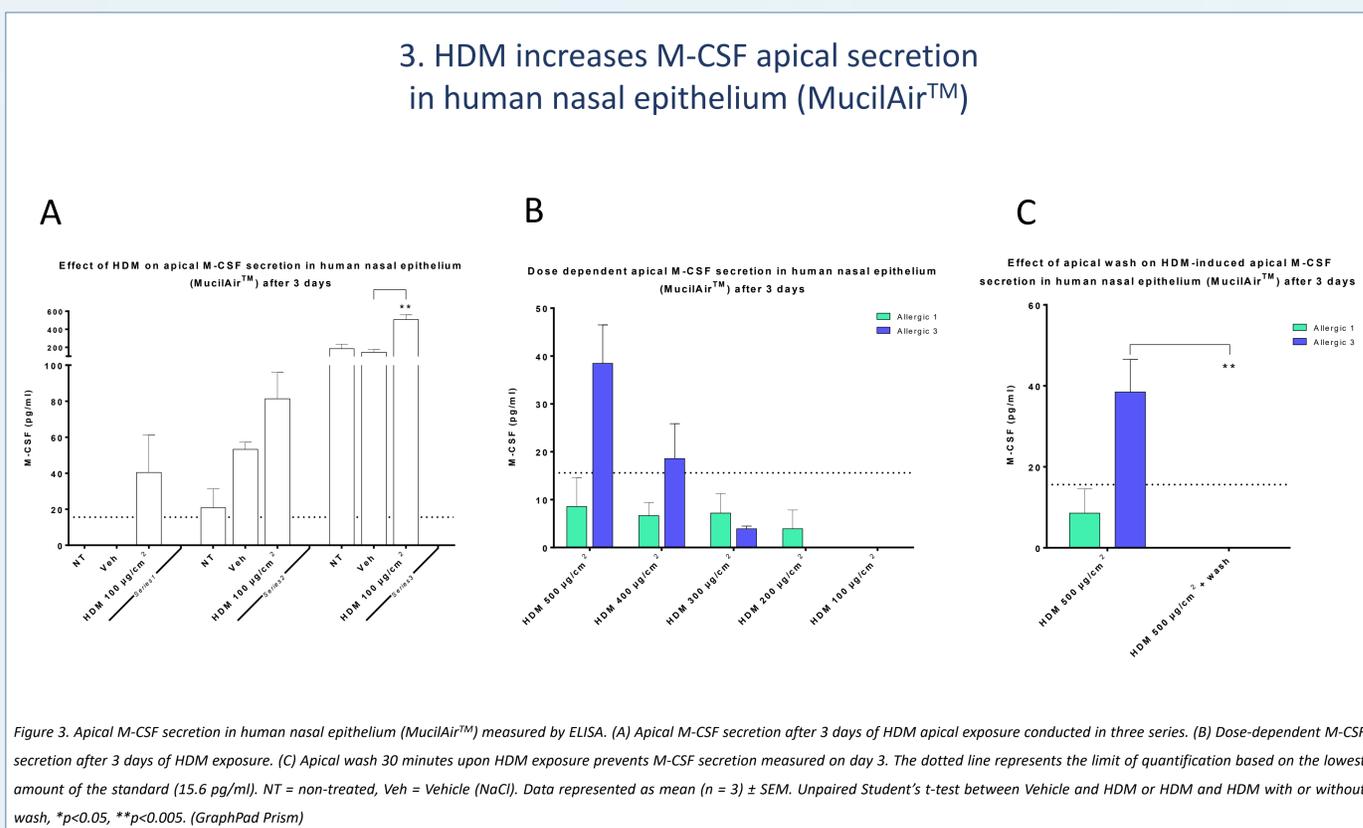
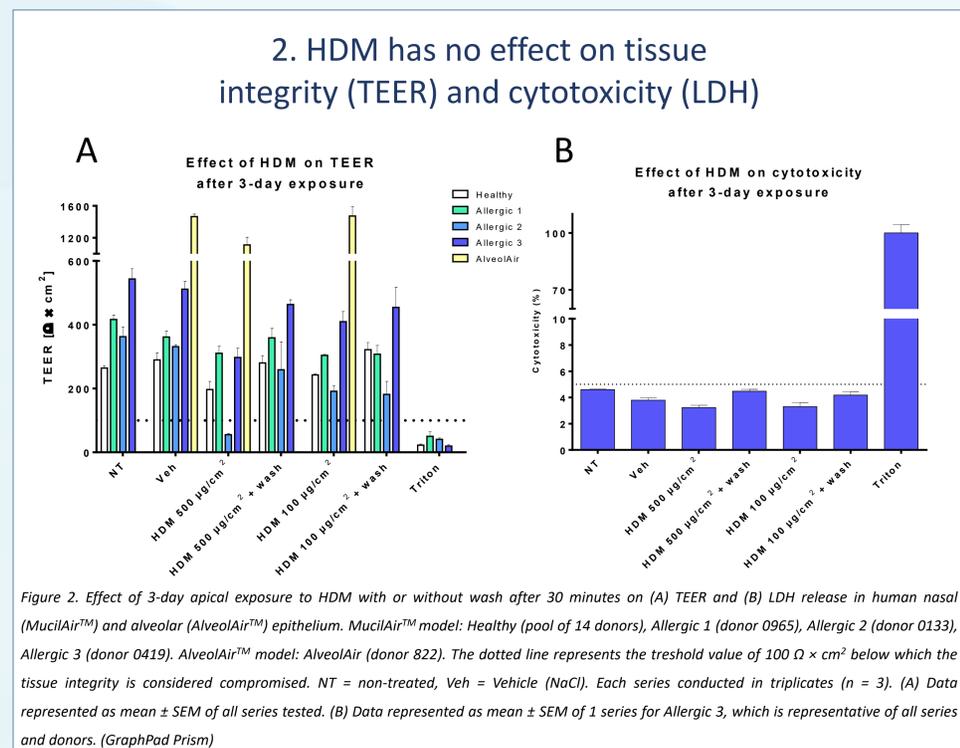
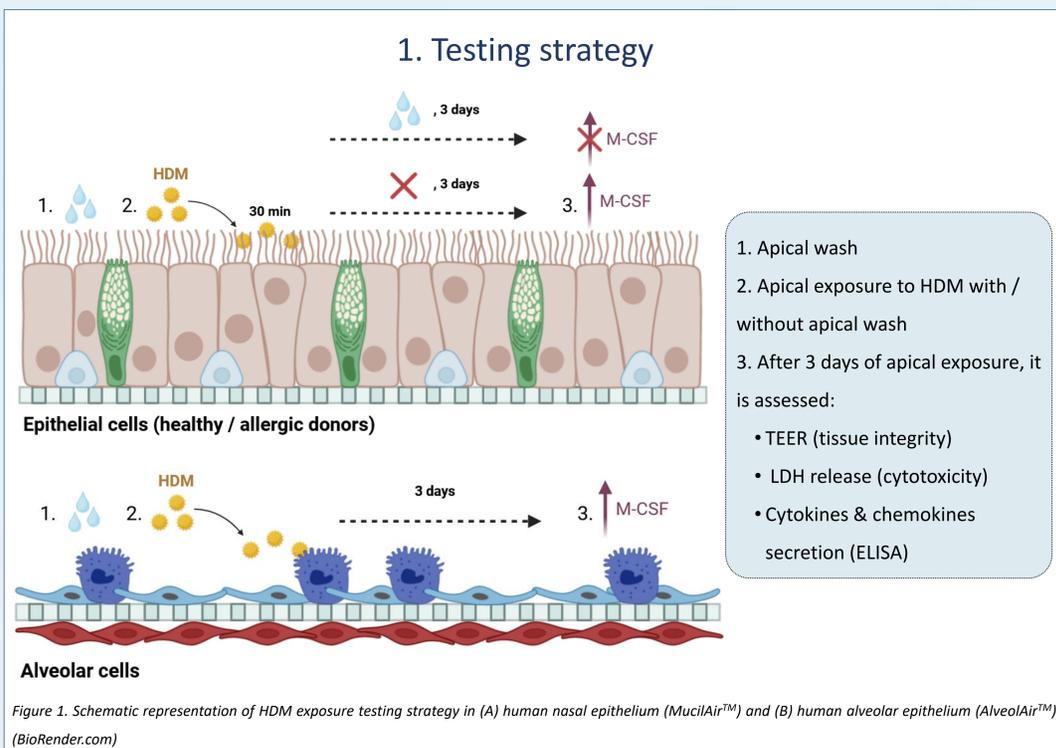


House dust mite induces M-CSF secretion in human airway epithelia

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An allergic reaction can result in airway remodelling and in an asthmatic condition, which is a life-threatening state. Thus, the identification of respiratory allergens is of great interest. House dust mite (HDM) is a common allergen that can elicit sensitization in susceptible individuals and upon further exposure an allergic reaction. The human airway epithelium (HAE) possesses an immunological function, exerted via a secretion of various mediators affecting the activation of immune cells. These include macrophage colony-stimulating factor (M-CSF), which plays a role in inflammatory macrophages proliferation, DCs trafficking and IgE production and has been shown to be present in greater abundance in both mice and humans following allergen exposure. Here, we report apical M-CSF secretion following HDM exposure using *in vitro* human nasal (MucilAir™) and alveolar (AlveolAir™) epithelium cultured at the air-liquid interface. The epithelia were reconstituted with primary cells isolated from either healthy or allergic donors.



6. Conclusion

- Overall, HDM has no disruptive or cytotoxic effect on HAE.
- HDM induces increase in M-CSF apical levels in both nasal (MucilAir™) and alveolar (AlveolAir™) models.
- HDM-induced upregulation of M-CSF can be prevented by apical wash 30 minutes following HDM exposure, demonstrating the ability of the model to test allergen-removing agents such as nasal sprays.
- MucilAir™ constitutively express M-CSF receptor on the apical surface.
- As next steps, inclusion of immune cells on MucilAir™ and AlveolAir™ as well as repeated exposures may be considered.