Murine Model to validate Drug Candidates against Asthma and Allergic Rhinitis

Overview:
McGill University is seeking to outlicense a murine model of allergic rhinitis (AR) and asthma. The murine model was developed to study nasal, bronchial, and systemic immune response to local allergen stimulation. Using the murine model described in *J. Allergy Clin Immunol 2002; 110 (6):891-898*, the investigator has shown that upper airways antigen challenge results in inflammatory changes in both the upper and lower airways and these are TH2-IL13 dependent. Aeroallergen natural sensitization occurs primarily in the nares; this underscores the importance of a well-characterized animal model that can mimic in vivo sensitization in human asthma and allergic rhinitis. Six to eight week old BALB/c mice are sensitized and challenged according to the schedule shown below:

![Schedule Diagram]

The need:
The murine model is useful for validating the efficacy of drug candidates for the treatment or prophylaxis of allergic rhinitis and asthma. Allergic rhinitis is the most common of the atopic diseases, affecting 15 to 20% of the population beginning as early as age 2 years. Allergic rhinitis is linked to allergic asthma and sinusitis with allergic rhinitis symptoms and skin prick test positivity to common aeroallergen occurring in up to 88% of asthmatic subjects. Treatment of allergic rhinitis reduces the frequency and severity of allergic asthma symptoms. Over 60 million people worldwide suffer from asthma while 150 million are affected by allergies.

Characteristics:
- Well characterized model mimicking in vivo sensitization observed in patients with asthma or allergic rhinitis.
- Intranasal sensitization is a unique approach that more closely mimics the allergic mechanism seen in patients and avoids the common use of systemic sensitization.
The originator:

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MD from McMaster University.

Research focuses on investigating the mechanisms by which the mucosal immune system regulates the responses to antigens. Using murine models of allergic asthma and rhinitis she showed upper airways antigen challenge results in inflammatory changes in both the upper and lower airways and that the airway hyper responsiveness and inflammation achieved with this model are TH2-IL13-dependent.