Accelerate allergy therapeutic development with functional basophil activation testing

RoukenBio's human whole-blood Basophil Activation Test provides functional, translational evidence of allergen-specific responses and therapeutic pathway inhibition.

Basophils treated with donor specific allergens show increased CD63 and CD203c expression

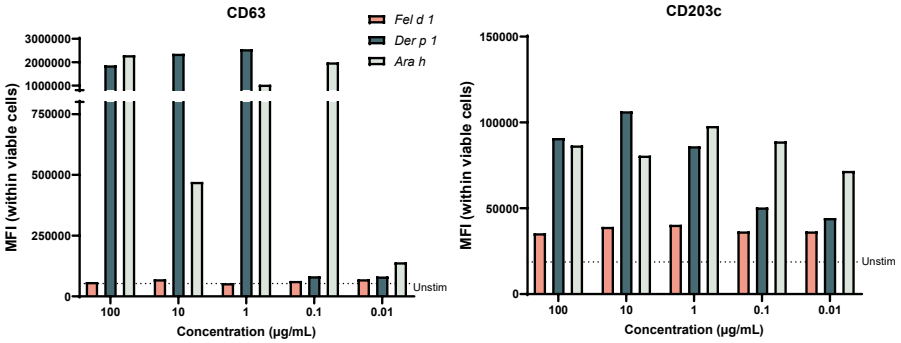

Figure 1: Fresh whole blood from in-house donor with self reported allergies to house dust mite, peanuts and cats. Degranulation, indicated by CD63 and CD203c upregulation shown in response to peanut (*Ara h*), and house dust mite (*Der p 1*) allergens, whereas no response to cat (*Fel d1)* protein was detected under the conditions tested.

Why use the BAT platform?

- ✓ Human whole-blood testing using allergy-characterised donors
- ✓ Functional assessment of allergen-specific basophil activation
- ✓ Mechanism-aligned CD63 and CD203c flow-cytometry readouts
- ✓ Evaluation of therapeutics targeting IgE, FcεRI and downstream signalling including BTK

To explore how this model could de-risk and accelerate your allergy therapeutics, contact: hello@rouken.bio

Mechanism of basophil activation and therapeutic inhibition

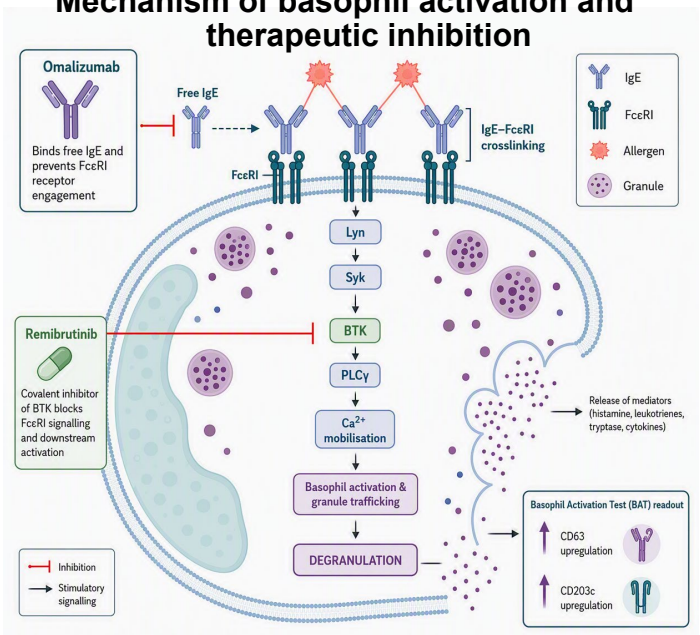

Figure 2: Allergen-induced IgE-FcεRI crosslinking activates basophils, resulting in degranulation and upregulation of activation markers CD63 and CD203c. Omalizumab inhibits IgE-FcεRI engagement, while remibrutinib inhibits downstream BTK signalling.

Dose- and time-dependent inhibition of basophil activation by omalizumab

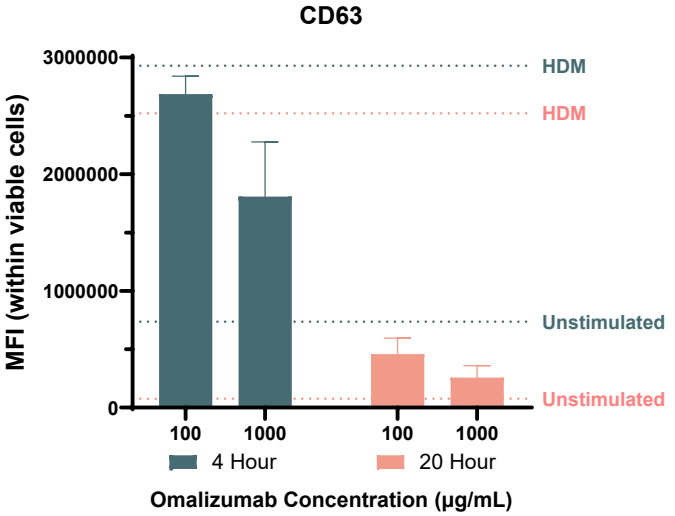

Figure 3: Basophil activation was induced using house dust mite (HDM). Whole blood was pre-incubated with omalizumab (100 or 1000 µg/mL) for 4 or 20 h prior to allergen stimulation, and CD63 expression (MFI, viable basophils) was measured by flow cytometry. Error bars display standard deviation.

Remibrutinib strongly suppresses allergen-induced basophil activation

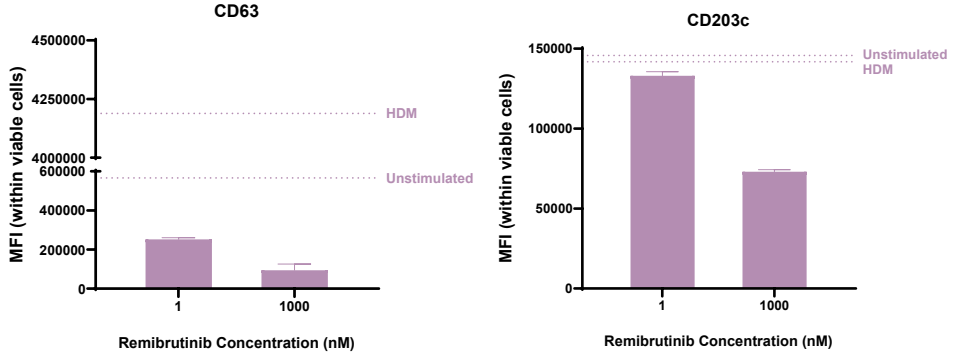

Figure 4: Following 1 h pre-incubation with remibrutinib (1 or 1000 nM), basophils were stimulated with HDM. CD63 and CD203c expression (MFI, viable basophils) was assessed by flow cytometry. Remibrutinib dose-dependently suppressed allergen-induced basophil activation, reducing marker expression to below unstimulated levels. Error bars display standard deviation.