

***The role of FRs in indoor dust
in potentiating/facilitating
allergic responses to inhaled
allergens***

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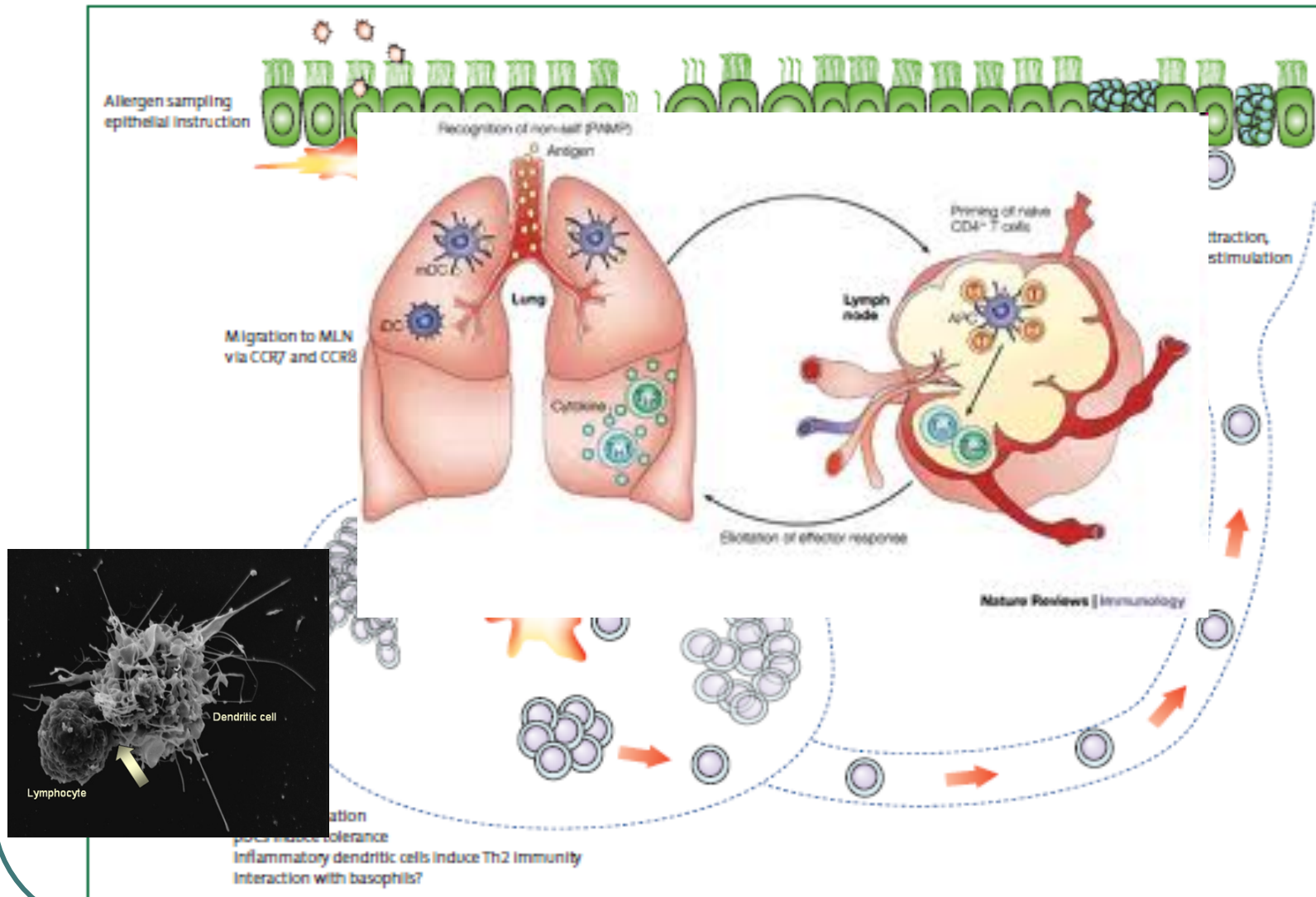
Supervisor: Leonie van Rijt

Hypothesis: BFRs can act as an adjuvant for sensitization to house dust mite in allergic asthma

HOW?

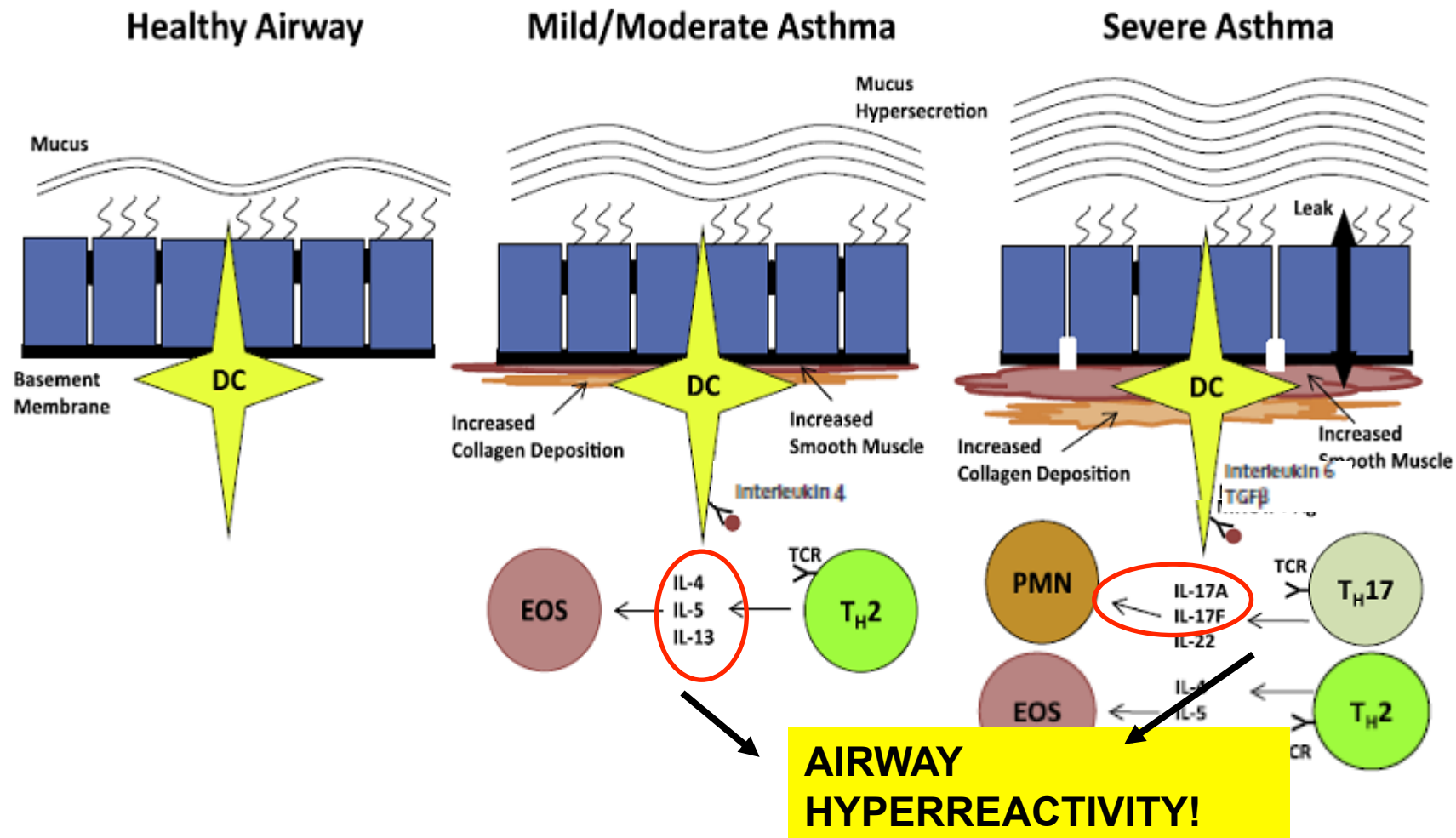
- A tremendous increase in both indoor exposure to FRs and prevalence of allergic asthma over the last decades
- One of the main allergen for **allergic asthma** is **house dust mite**
- Exposure to airborne **pollutants** can also trigger asthma and/or increase the **severity of asthma**
- A major indoor pollutant is **BFRs** which accumulate in **house dust**
- BFRs can affect antigen presentation by **dendritic cells** (crucial for development of allergic asthma)

The importance of dendritic cells



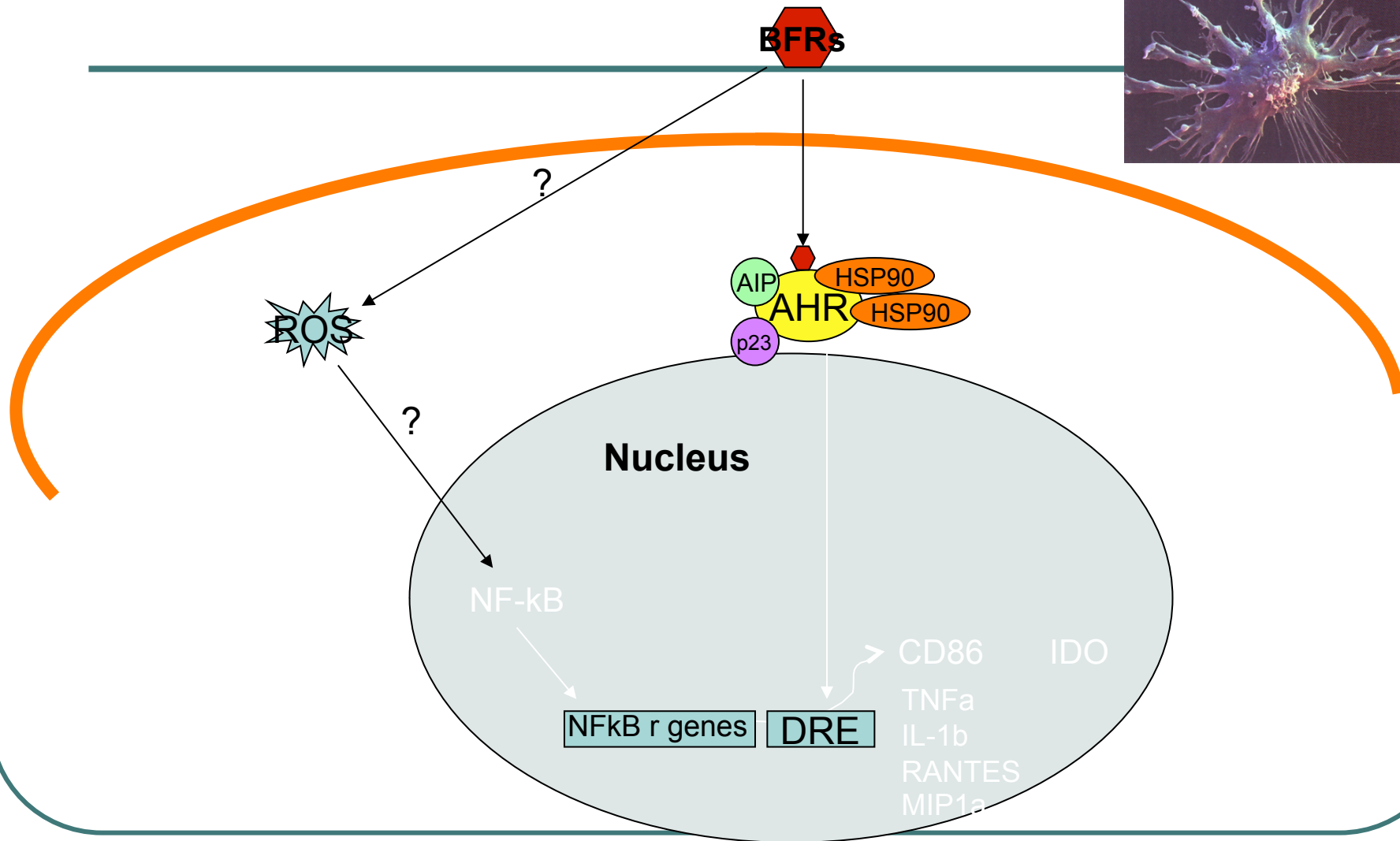
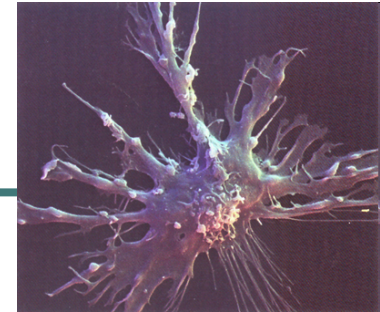
Lambrecht et al., Nat. Rev. Immunol. 2003

Models for allergic asthma



Aujla and Alcorn, Biochimica et Biophysica Acta. 2011

BFRs might affect antigen presentation by DCs (Hypothetical!)

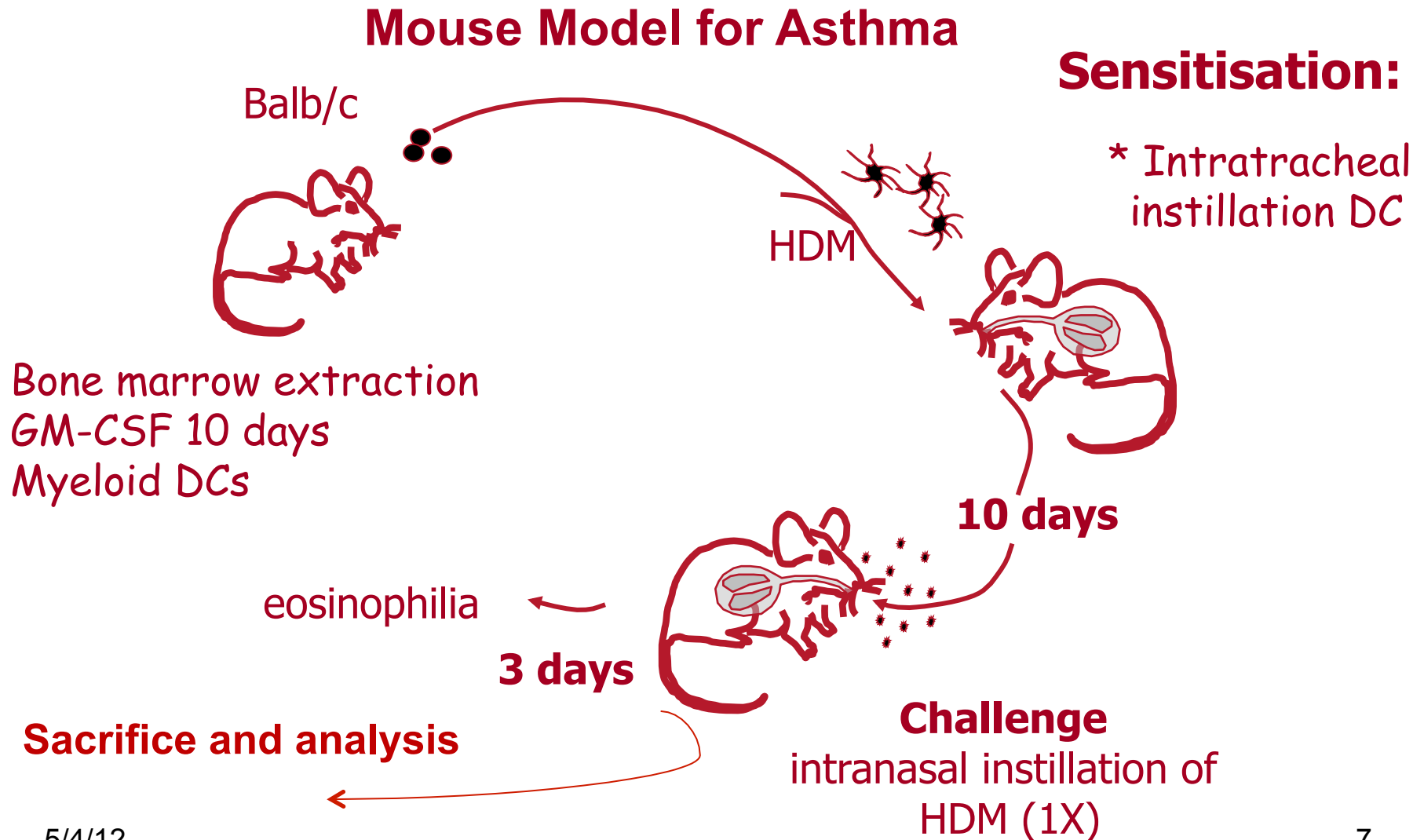


First question:

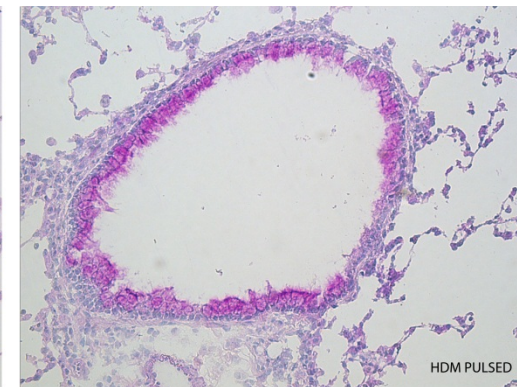
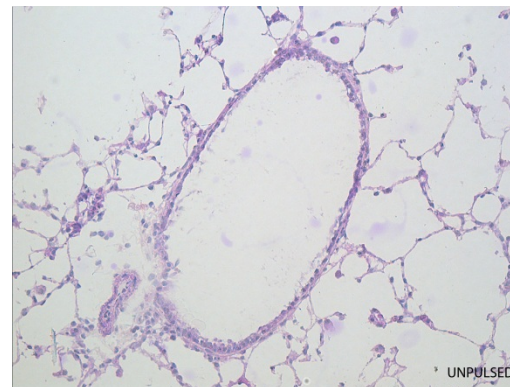
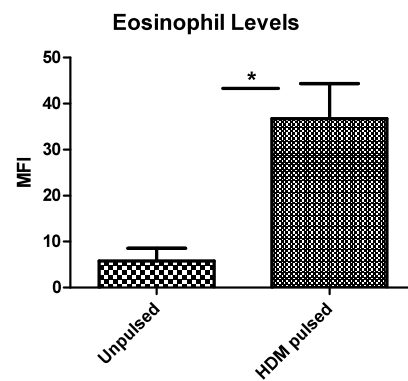
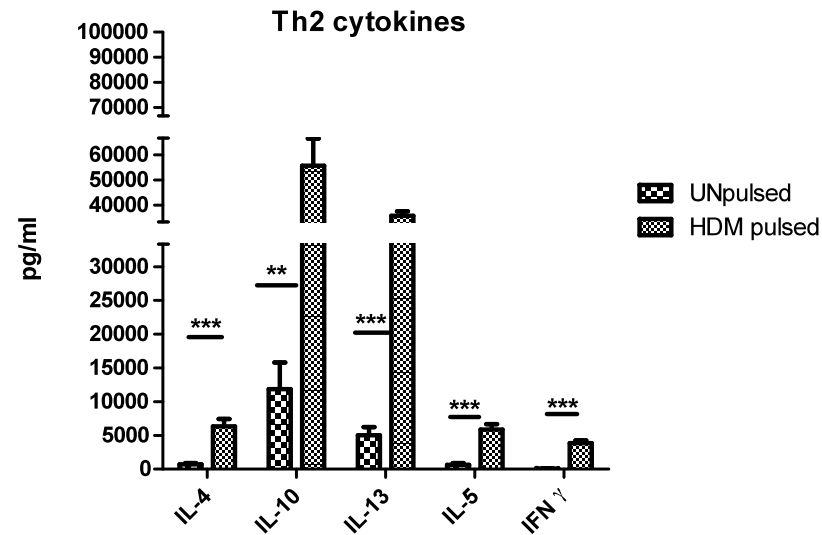
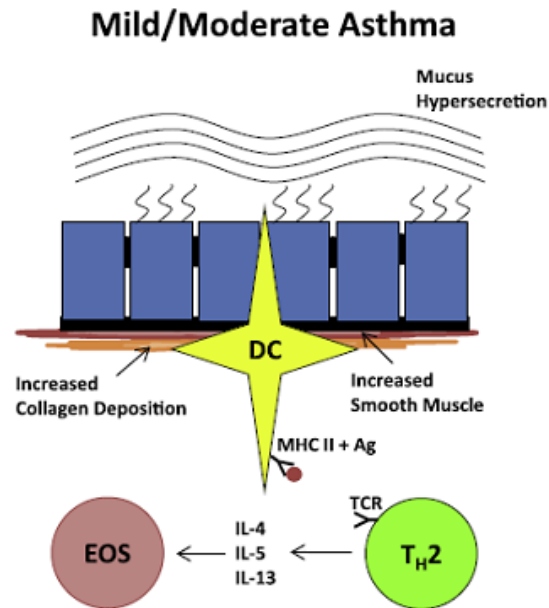
- ***Can HBCD potentiate antigen presentation by DCs in a DC driven mouse model for allergic asthma?***



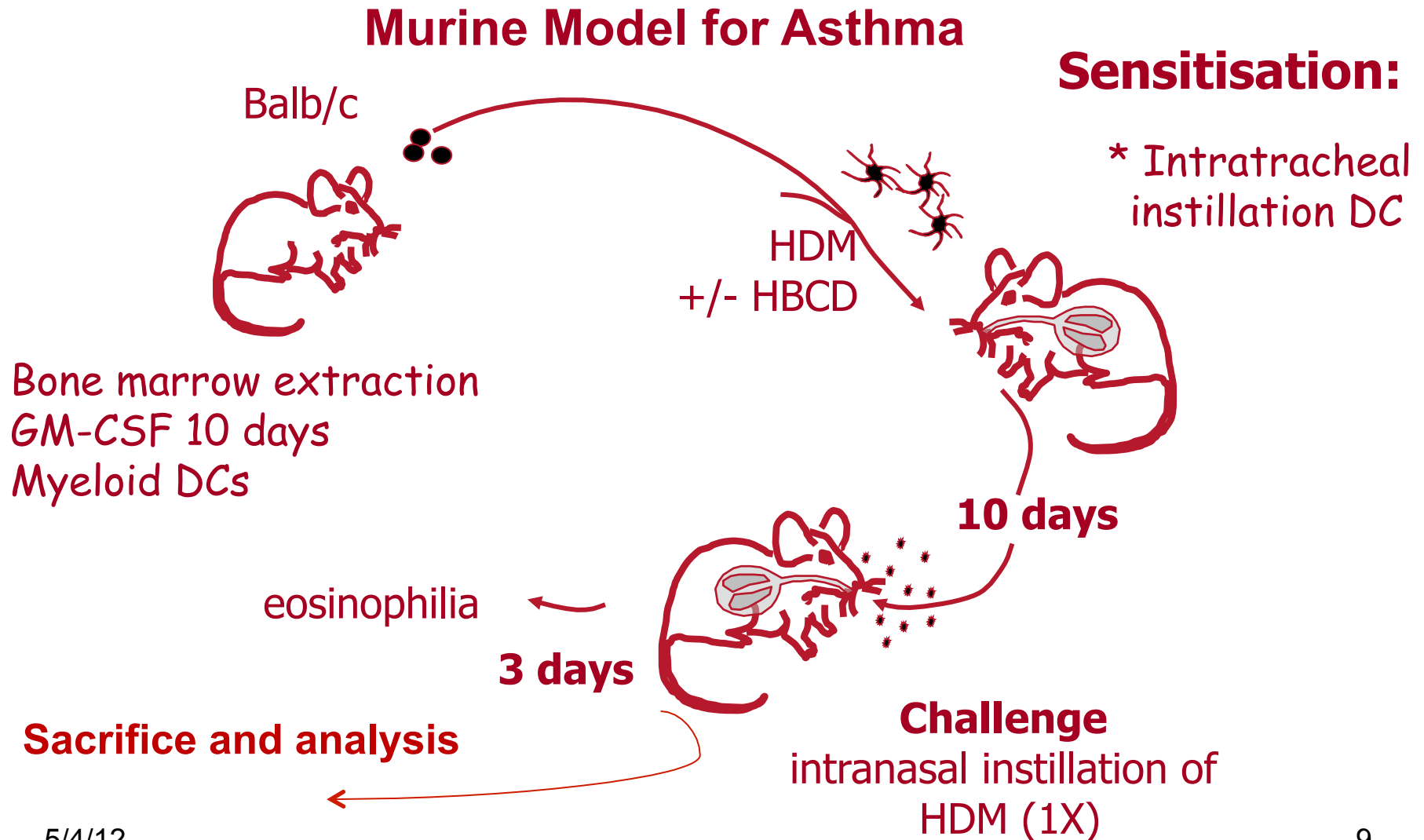
1. Development of DC driven mouse model for allergic asthma- *methods*



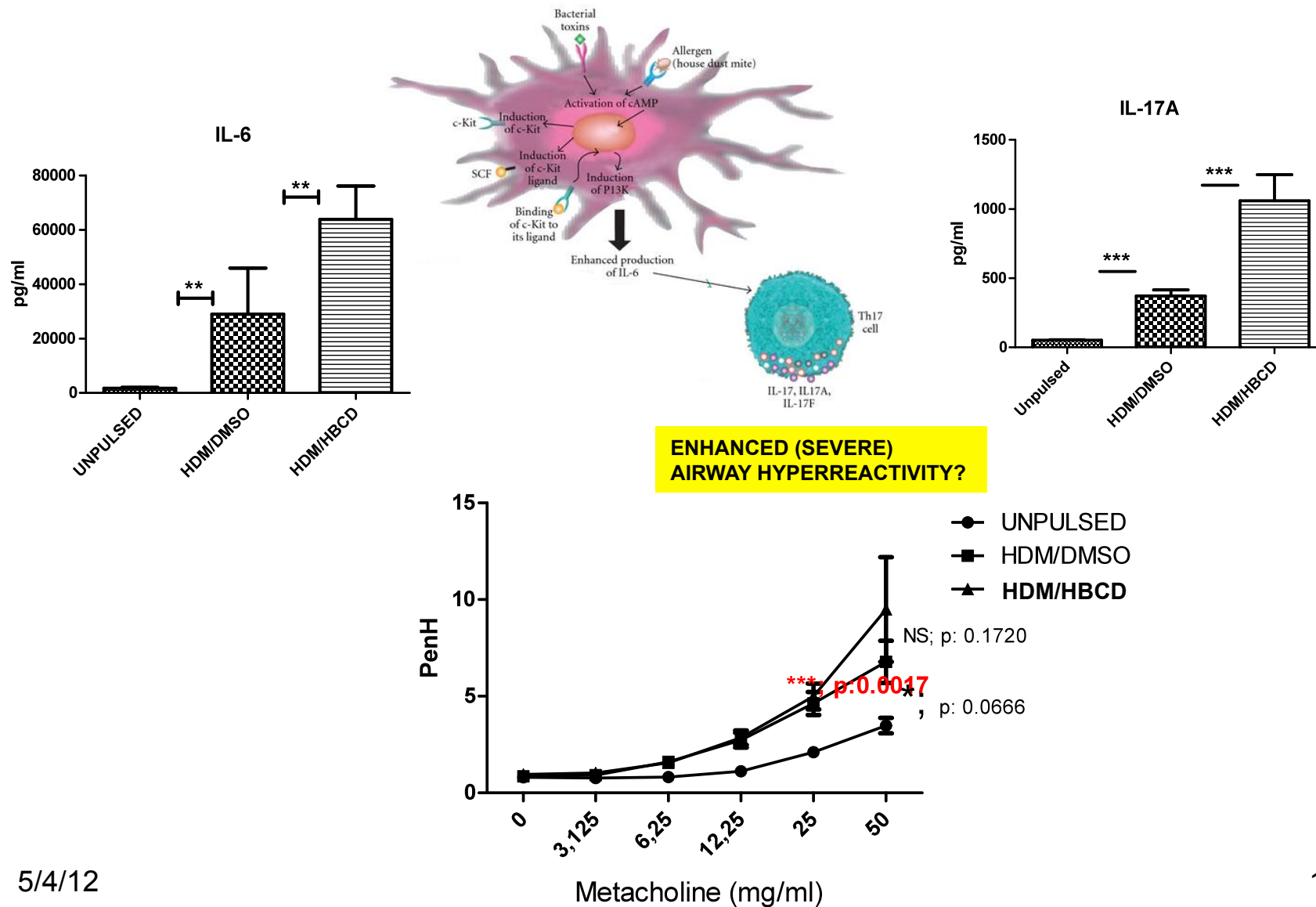
1. Development of DC driven murine model for allergic asthma - *results*



2. HBCD effect on antigen presentation of HDM pulsed DC-methods



2. HBCD effect on antigen presentation of HDM pulsed DC-results





Conclusion and Future Aspects

- We first developed **DC driven asthma mice model**.
- **HBCD** was selected as a candidate BFR for the first experiments.
- HBCD **increased** HDM induced **IL-6 production** in DCs and HDM/HBCD DC sensitised mice had an **increased IL-17A** production.
- HBCD might **cause more severe asthma** by helping DCs to induce Th17 cells.

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- Other BFRs like BDE-209?
 - Combination of BFRs profile?
 - Testing BRFs in different allergic asthma mouse models?

Acknowledgement

INFLAME

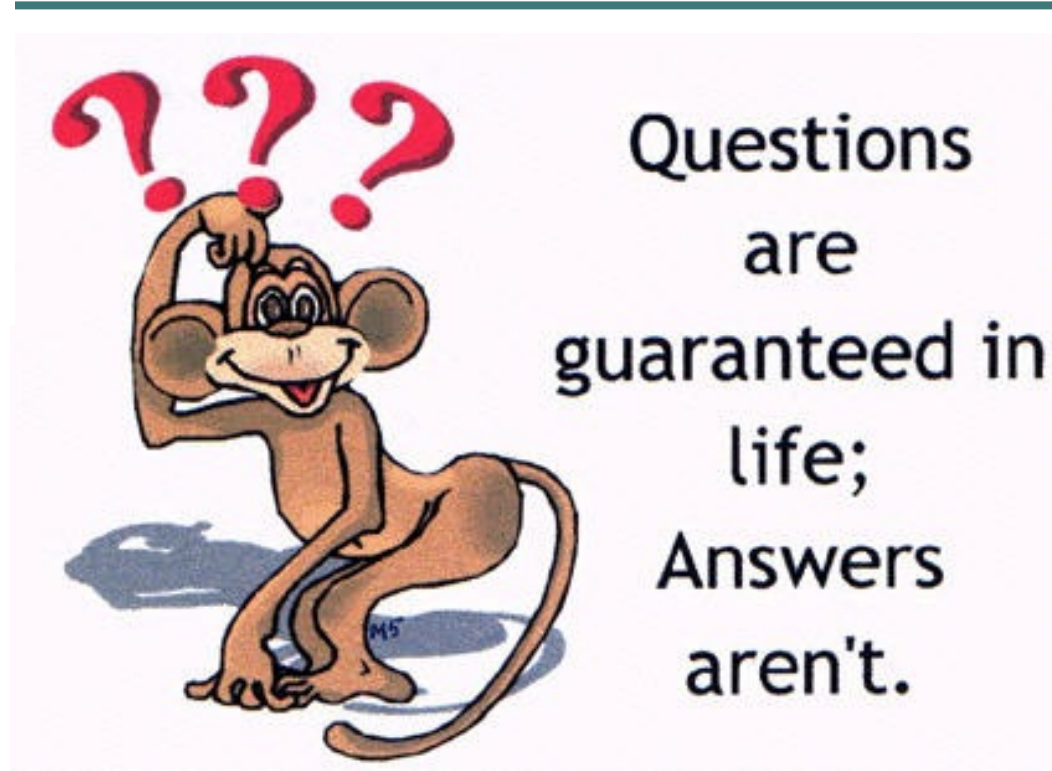
- Dr. Leonie van Rijt
- Adrian Logiantara
- Prof.Dr. Ronald van Ree



- Dr.Timo Hamers



THANK YOU
for listening!



BDE-209

