

# The immune response of rabbits to different subcutaneous allergen immunotherapies against ragweed allergy

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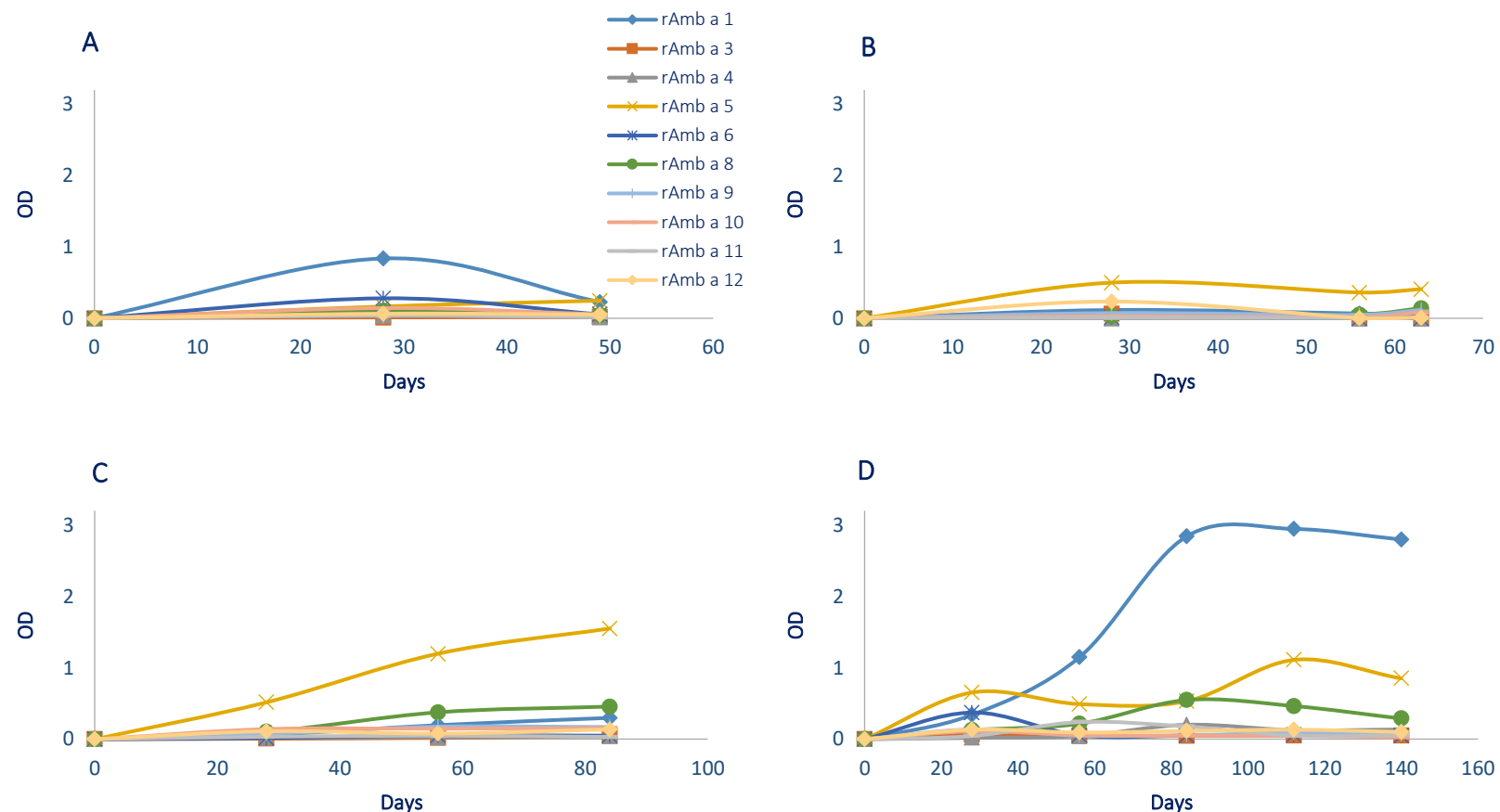
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**Background:** Ragweed (*Ambrosia artemisiifolia*) pollen is one of the most important sources of respiratory allergies in Europe. Allergen-specific immunotherapy (AIT) is considered the only long-lasting treatment, able to prevent the progression of IgE-mediated allergic rhinitis to asthma, but the content of allergens in different AITs may vary.

**Aim:** This study aimed to assess the IgG induction towards various ragweed allergens upon vaccination with available subcutaneous allergen commercially immunotherapies (SCIT) in rabbits.

**Method:** Four ragweed extract-based SCIT (Immunotherapy 1, 2, 3 and 4) were administered as antigens in two rabbits according to the manufacturer immunization schedule. Sera from immunized rabbits were used to detect specific IgG (sIgG) antibodies against ragweed recombinant allergens Amb a 1, Amb a 3, Amb a 4, Amb a 5, Amb a 6, Amb a 8, Amb a 9, Amb a 10, Amb a 11 and Amb a 12 by ELISA.

**Results:** High Amb a 1 sIgG levels were detected in rabbit antisera against Immunotherapy 1 and 4; medium Amb a 5 sIgG levels were detected in rabbit antisera against Immunotherapy 2, 3 and 4, whereas lower Amb a 8 sIgG levels were detected in rabbit antisera against Immunotherapy 3 and 4. IgG levels against the other tested allergens were very low in all immunotherapies.



**Evaluation of the IgG response of rabbits immunized with Immunotherapy 1, 2, 3 and 4 (from A-D).** Sera from two rabbits immunized with each SCIT were used to test the IgG response to ragweed using 10 recombinant allergens (figure legend). Optic density for all sera was measured after 30 min at 405 nm and mean OD value of the two rabbits was displayed on y-axis. The duration of each immunotherapy is displayed on x-axis.

**Conclusions:** Our study showed that different extract-based immunotherapies induced different IgG profiles which may refer to different allergen content or allergen concentration in the extract. The duration of the therapy and/or the number of applied doses also seems to affect the IgG induction.