

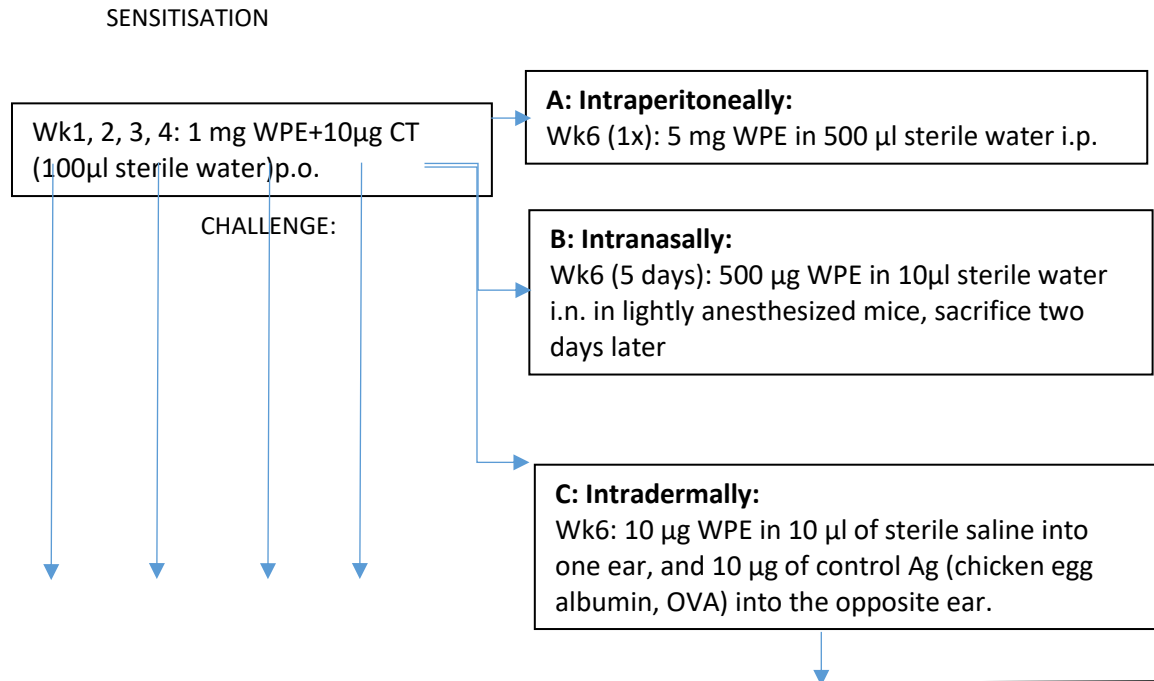
Mouse models for peanut allergy

Model	Strain	Duration	Endpoints	Reference
1. CT-Peanut induced Anaphylaxis	C57Bl/6	6 weeks	<u>After I.P. challenge:</u> -Core body temperature drop, -PeanutExtract-IgE, -eosinophilia peritoneal cavity -Th1/Th2 cytokine production in spleen & LN <u>After I.N. challenge:</u> eosinophilia in BAL <u>After I.D. challenge:</u> increased ear thickness	PMID: 17982059
2. SEB_Peanut induced Anaphylaxis	C57Bl/6 BALB/c	9 weeks	- Core body temperature drop, -Peanut Extract specific-IgE, -eosinophilia in blood -Th2 cytokine production in spleen	PMID: 19022495
3. Adjuvant free Peanut induced sensitisation	C3H/HeJ	3 weeks	- Core body temperature drop, -Peanut Extract specific-IgE, -breathing rate drop, -mmcp in serum, -Immediate cutaneous hypersensitivity reaction in skin of abdomen (Evans blue)	PMID: 18268389
4. CT_Peanut induced anaphylaxis in C3H/HeJ	C3H/HeJ	5 weeks	Peanut specific IgE, 40 min after challenge: cutaneous reactions with puffiness around the eyes and mouth, diarrhea, followed by respiratory reactions, such as wheezing and labored respiration. The most severe reactions provoked loss of consciousness and death. More severe reaction in low dose (5mg) sensitisation. Mast cell degranulation, plasma histamine, T/B-cell proliferation	PMID: 10887318
5. Humanized Peanut induced anaphylaxis model	NOD-scid IL2Rgam ^{-/-} mice (female)	10 weeks	Peanut specific IgE, clinical signs (puffiness around the eyes/snout and pilar erecti, itching/ruffling of fur, and decreased ambulation and respiratory rate decreased), passive cutaneous anaphylaxis, histamine release	PMID: 27372563

Short protocols per model:

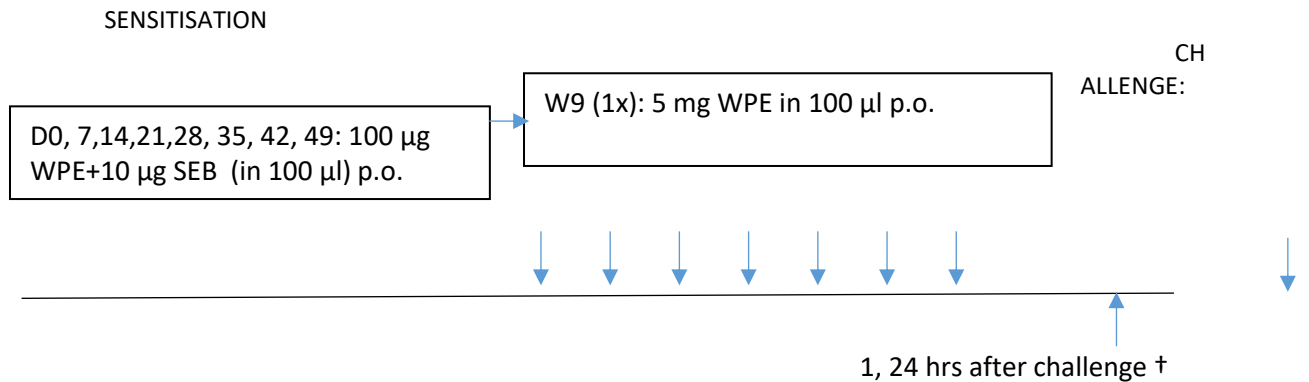
1. CT-Peanut induced Anaphylaxis (PMID: 17982059) in C57Bl/6 mice:

CT: cholera toxin, WPE: whole peanut extract



Week 6 †, several time points after last challenge

2. SEB-Anaphylaxis peanut model (PMID: 19022495) in C57Bl/6 or Balb/c :



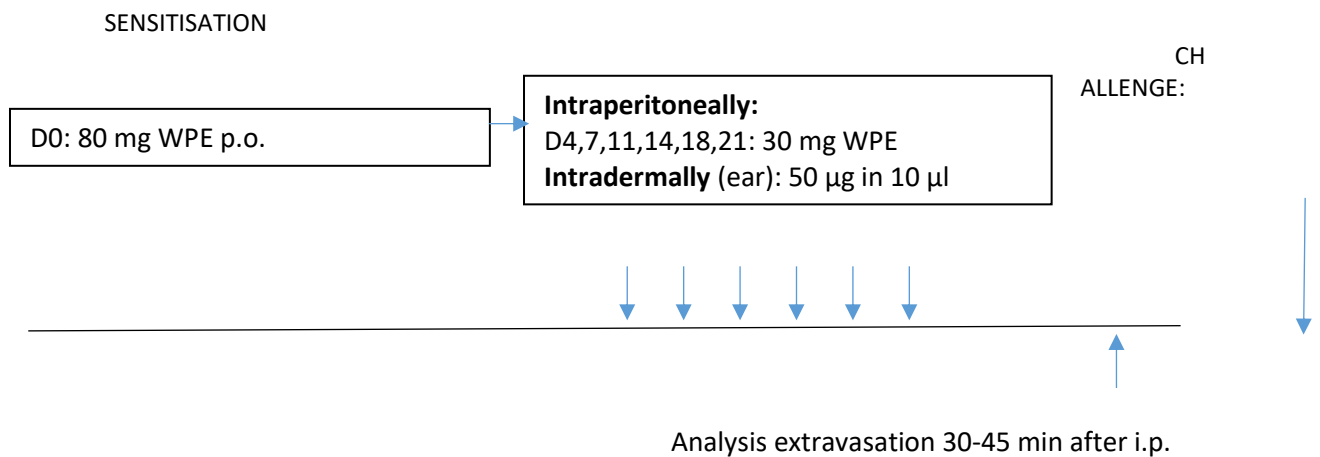
SEB: Staphylococcal enterotoxin B, WPE: whole peanut extract

Sensitisation_Day 0,7,14,21,28, 35, 42, 49: 100 µg Whole Peanut Extract + 10µg Staphylococcal enterotoxin B in 100µl by oral gavage

Challenge_Week 9: 5 mg WPE in 100 µl oral gavage

Sacrifice: 1 hr (blood), 24 hr (tissues) after last challenge

3. Adjuvant free Peanut induced sensitisation in C3H/HeJ:

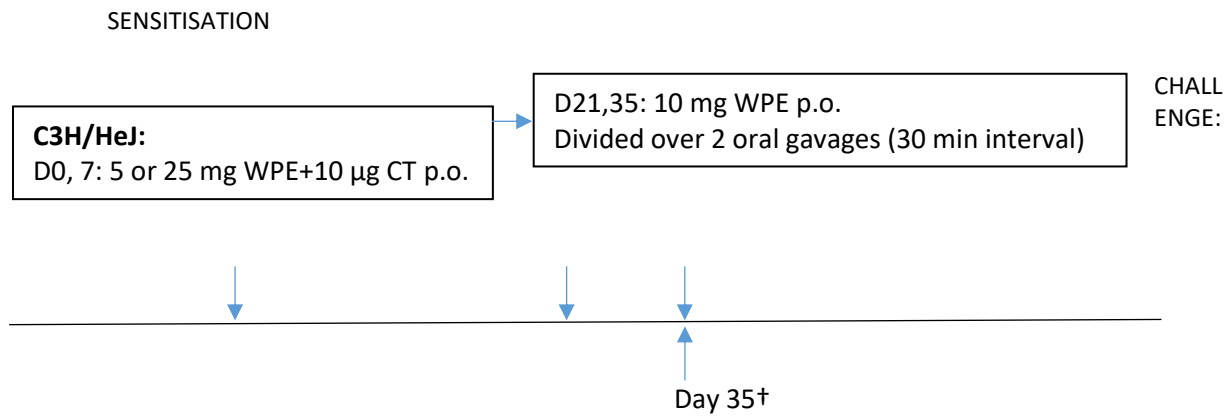


Sensitisation_Day 0: 80 mg freshly homogenized peanut by oral gavage.

Challenge: day 4,7,11,14,18,21: 30 mg WPE i.p. (in combination with i.d. challenge in Ear with 5mg/ml in 10 µl; 40 minutes after injection readout). Attention: a challenge with WPE **i.g.** (natural route) did not yield in a consistent anaphylaxis (data not shown).

Sacrifice: at different time points

4. C3H/HeJ +Cholera Toxin (CT) adjuvant



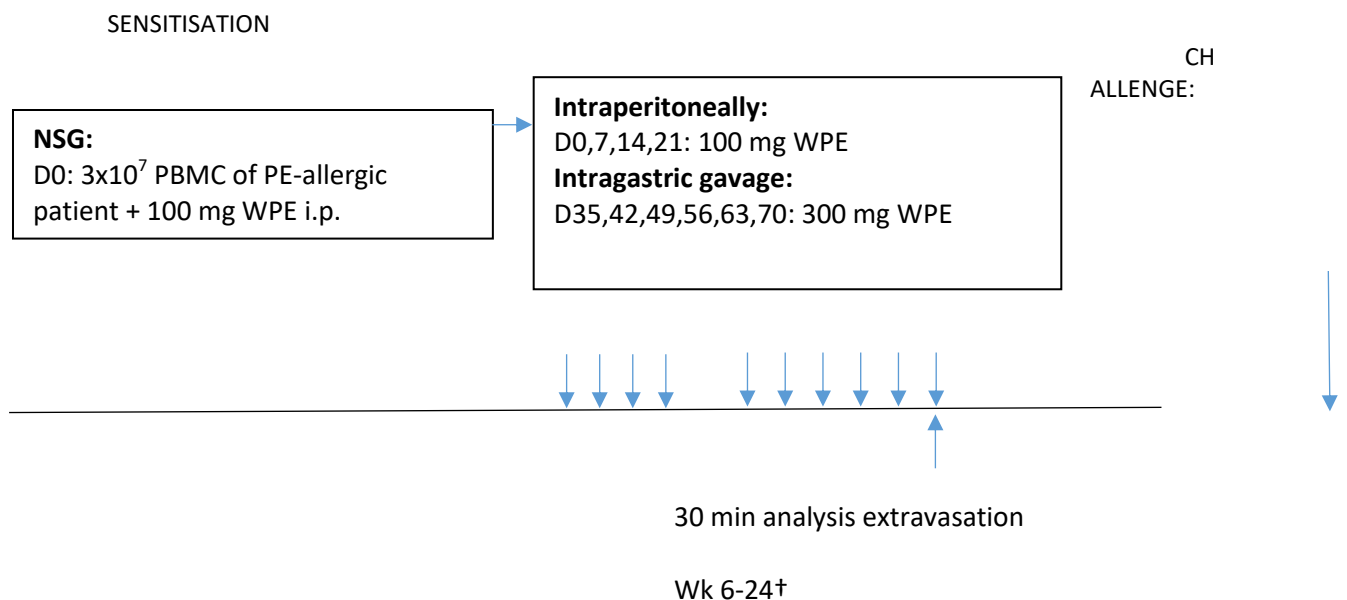
Sensitisation: day 0 and 7: 5 or 25 mg freshly ground peanut +10 µg CT per oral gavage

Day 21 (overnight fasted): 10 mg CPE in total, divided over two oral gavages at 30 min intervals
(Attention: it's reported that this challenge will be fatal for some mice!)

Day 35: challenge: 10 mg CPE by oral gavage

Sacrifice: day 35

5. Humanized model in NSG mice with PBMCs of PE-allergic patients



Sensitisation: 3×10^7 blood mononuclear cells of PE-allergic patients mixed with 100 mg of crude peanut extract in a total volume of 200 µL of 0.9% sodium chloride split in 2 separate injection sites (100 µL each).

Challenge (overnight fasted): D0,7,14,21: 100 mg of crude peanut extract i.p. Mice were then challenged at day 35,42,49,56,63,70 by intragastric gavage with 300 mg of crude peanut extract.

Sacrifice: different time points