

0.1 ng/ml peanut

1 ng/ml peanut

10 ng/ml peanut

CD203c MFI

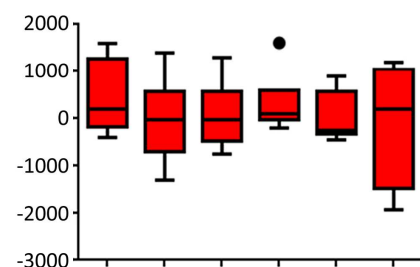
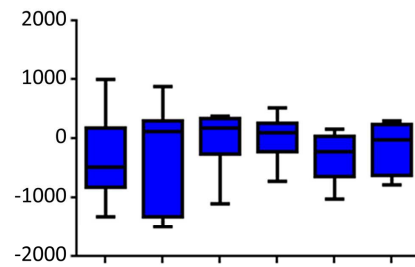
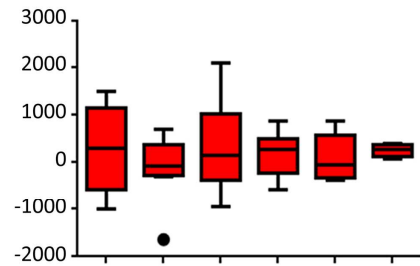
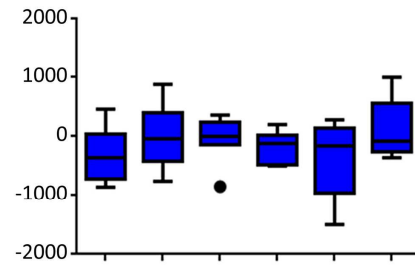
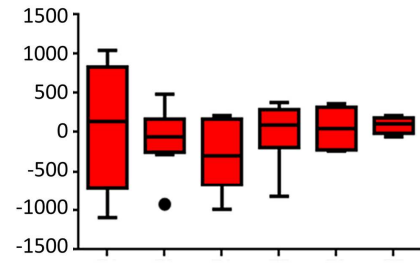
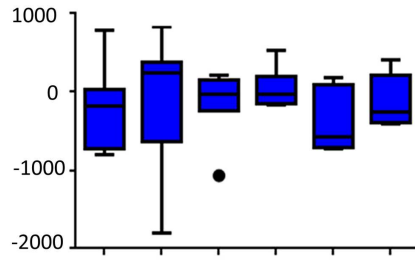
A

B

C

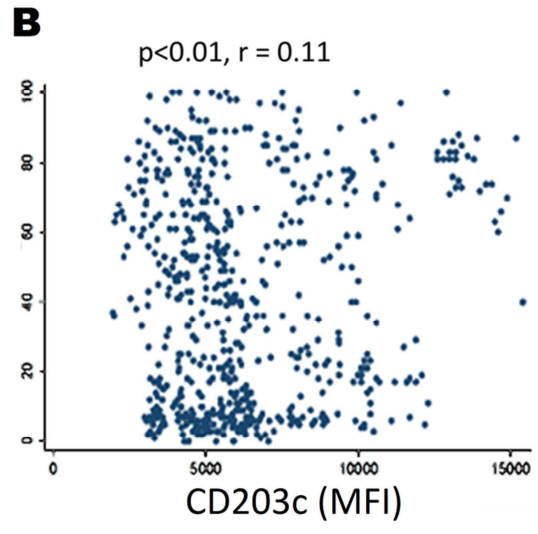
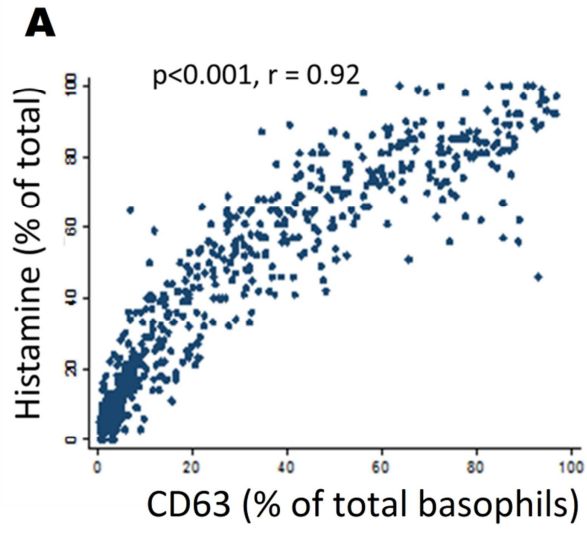
OIT

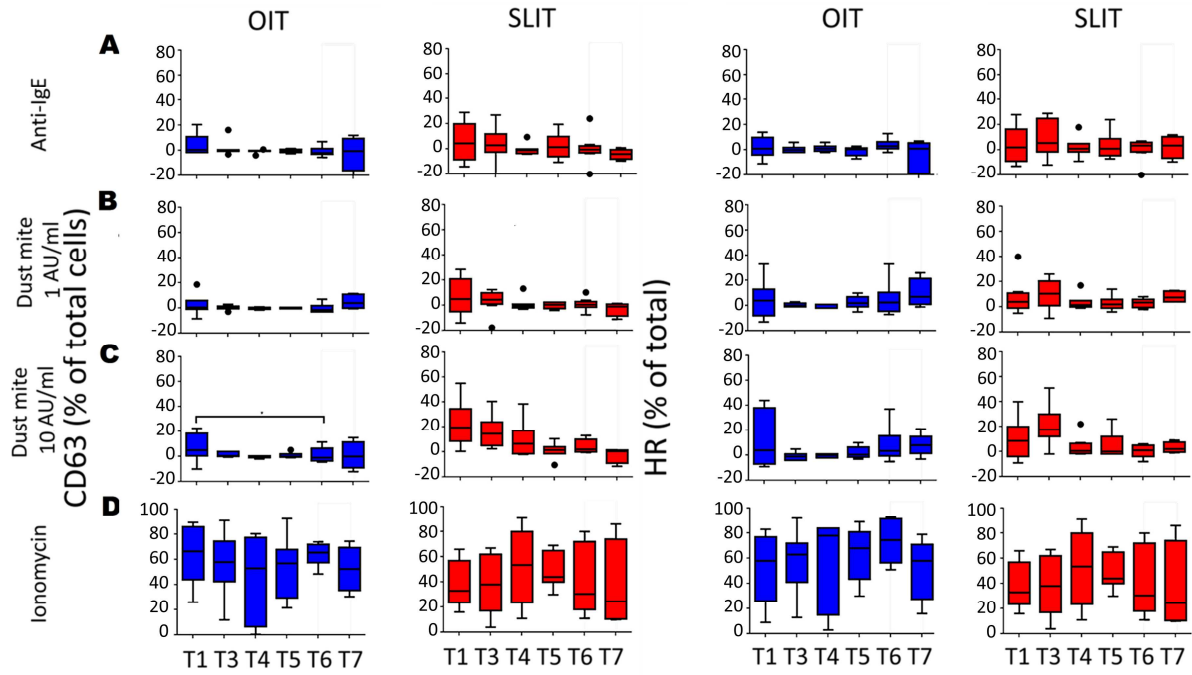
SLIT

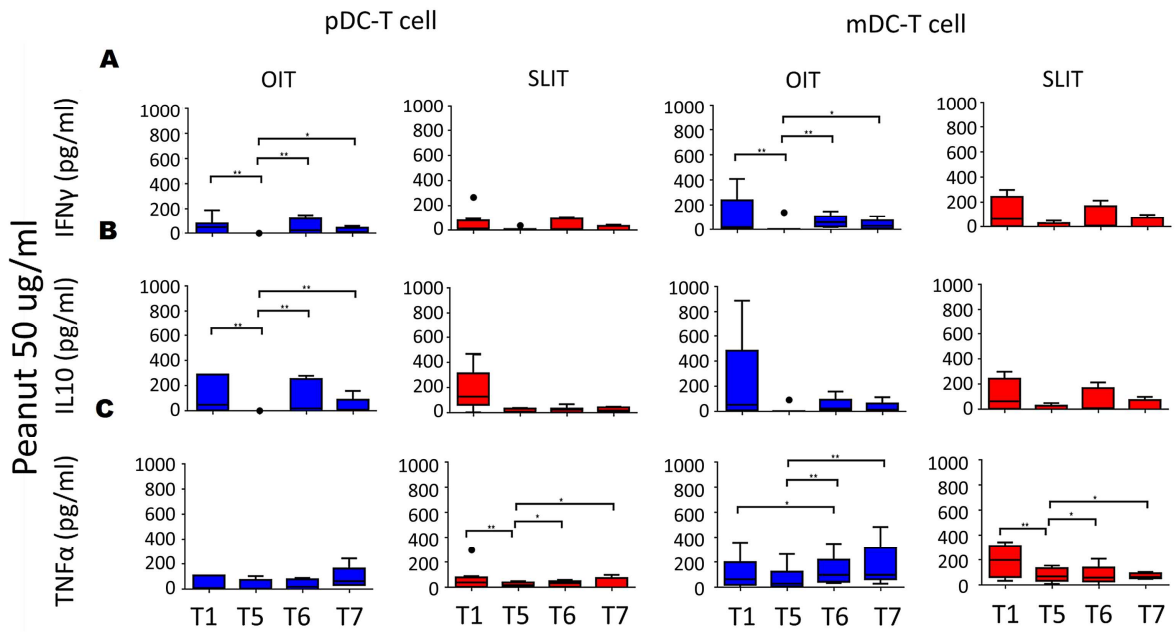


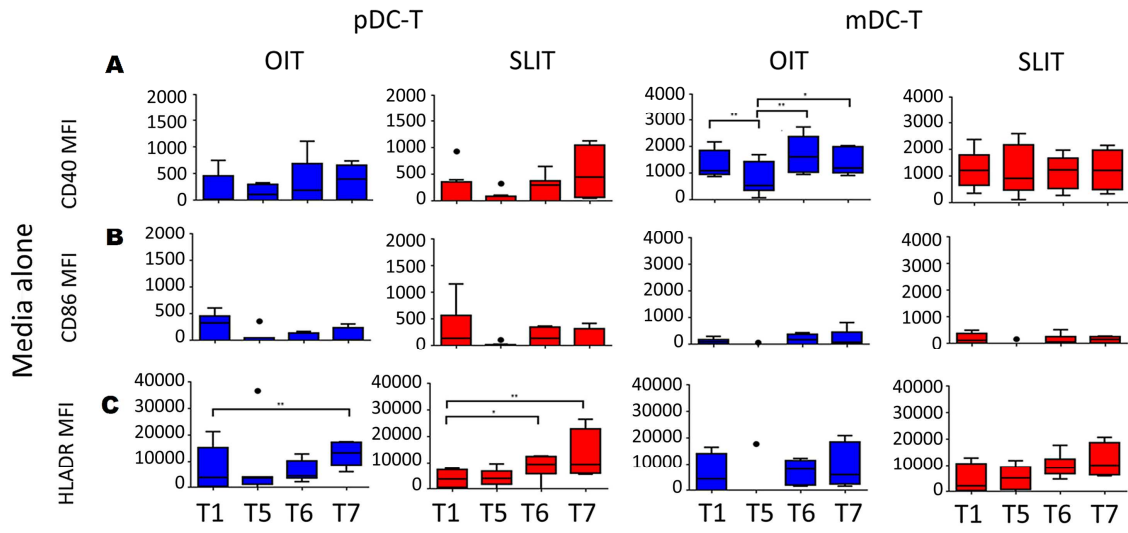
T1 T3 T4 T5 T6 T7

T1 T3 T4 T5 T6 T7





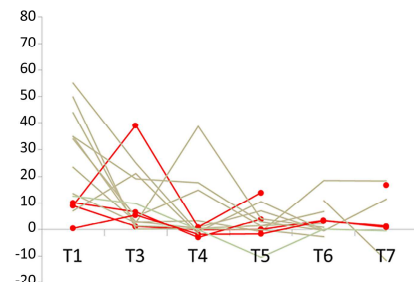




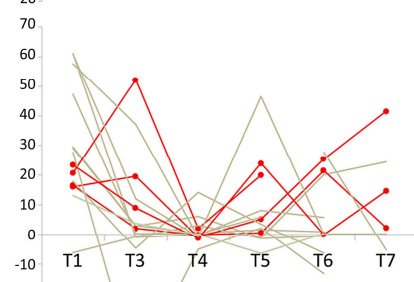
10 ng/ml peanut 1 ng/ml peanut 0.1 ng/ml peanut

CD63(% of total basophils)

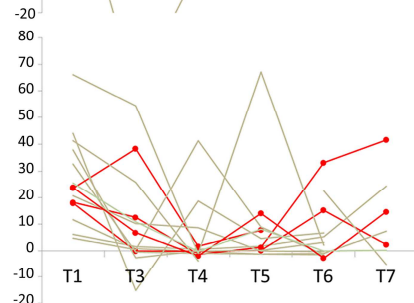
A



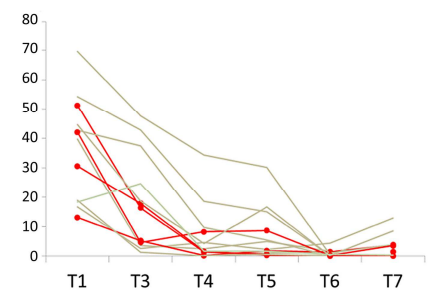
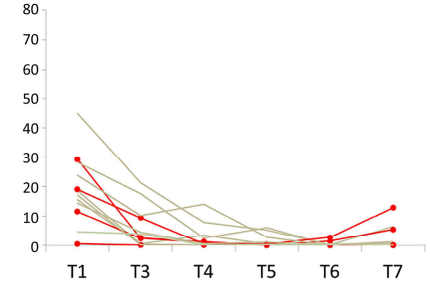
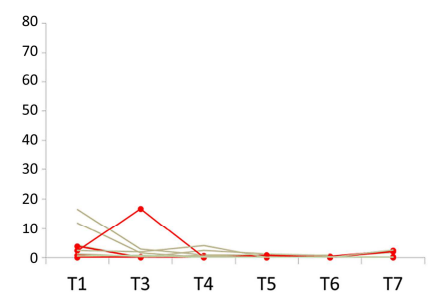
B

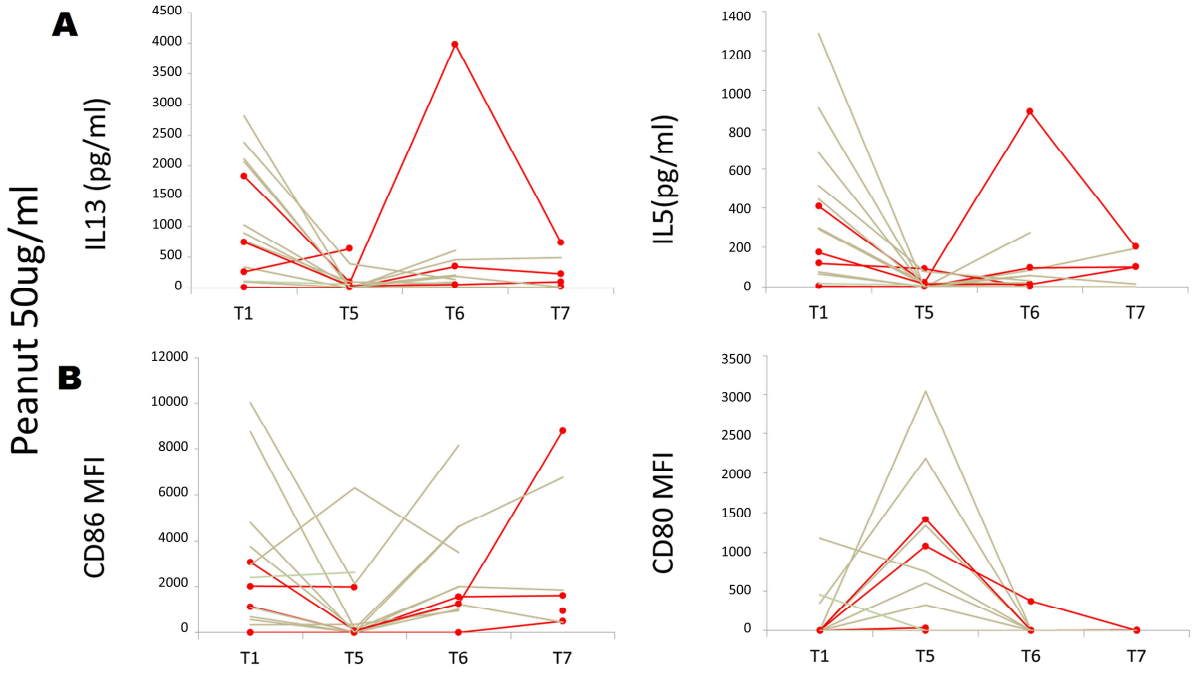


C



IL4(% of total basophils)





Supplementary Figure legends:

Suppl. Fig 1. Flowchart summarizing the clinical study protocol for the subjects from randomization to final food challenge.

Suppl. Fig 2. CONSORT flow diagram detailing the progress of participants throughout the clinical trial.

Suppl. Fig 3. Flow cytometry gating strategy for CD63 and CD203c analysis. An initial gate was drawn to select small granular cells via SSC and FSC (**A**). Doublets were excluded (not shown). Basophils were then identified as CD123⁺ and BDCA2⁻ (**B**) and then CD63^{hi} vs. CD63^{low} cells were defined. The mean fluorescence intensity (MFI) for CD203c was determined on all basophils.

Suppl. Fig 4. Effect of OIT or SLIT on CD203c mean fluorescence intensity (MFI). CD203c expression was measured in subjects undergoing OIT (left panels) and SLIT (right panels) for peanut at three doses: 0.1ng/ml (**A**), 1ng/ml (**B**) and 10ng/ml (**C**). T1-T7 correspond to timepoints blood was collected. OIT: N=7 at T1-T5, 5 at T6, and 4 at T7; SLIT: N=8 at T1-T4, 7 at T5, 8 at T6 and 4 at T7. * p<0.05; ** p<0.01

Suppl. Fig 5. Correlation between basophil histamine release (HR) and CD63 expression or CD203c mean fluorescence intensity (MFI). Generalized estimating equations were used to adjust for independent variables of time and subject, while r values were obtained via simple regression.

Suppl. Fig 6. Effect of OIT and SLIT on basophil reactivity in response to IgE-dependent and – independent stimuli. Stimulated CD63 expression and histamine release (HR) in basophil-enriched suspensions from subjects receiving OIT and SLIT in response to anti-IgE (**A**), dust mite at 1AU/ml (**B**) and 10AU/ml (**C**), and ionomycin (**D**). T1-T7 correspond to timepoints blood was collected. OIT: N=7 at T1-T5, 5 at T6, and 4 at T7; SLIT: N=8 at T1-T4, 7 at T5, 8 at T6 and 4 at T7. * p<0.05; ** p<0.01

Suppl. Fig 7. Effect of peanut OIT and SLIT on cytokine responses in DC-T cell co-cultures. IFN- γ (**A**), IL-10 (**B**), and TNF- α (**C**) were measured in supernatants from co-cultures of pDCs or mDCs with autologous CD4⁺ T cells stimulated with 50 ug/ml crude peanut extract. Spontaneous cytokine secretion, as measured in media alone, was subtracted to obtain allergen-induced values. T1-T7 correspond to timepoints blood was collected. OIT: N=7 at T1-T5, 5 at T6, and 4 at T7; SLIT: N=8 at T1-T4, 7 at T5, 8 at T6 and 4 at T7.. * p<0.05; ** p<0.01.

Suppl. Fig 8. Effect of peanut OIT and SLIT on DC expression of co-stimulatory molecules and HLA-DR when cultured in media alone. Mean fluorescence intensity (MFI) of CD40 (**A**), CD86 (**B**) and HLA-DR (**C**) was measured on pDCs or mDCs following co-culture with CD4⁺ T cells stimulated with media alone. T1-T7 correspond to timepoints blood was collected. OIT: N=7 at T1-T5, 5 at T6, and 4 at T7; SLIT: N=8 at T1-T4, 7 at T5, 8 at T6 and 4 at T7. * p<0.05; ** p<0.01

Suppl. Fig 9. Plot of individual subject basophil CD63 and IL-4 responses to peanut. Basophil-enriched suspensions (CD63) or whole blood (IL-4) was stimulated with crude peanut extract at 0.1 ng/ml (**A**), 1 ng/ml (**B**), and 10ng/ml (**C**). Spontaneous CD63 expression in media alone was subtracted to obtain stimulated values. All SLIT and OIT subjects are shown. Red lines represent patients achieving sustained unresponsiveness. T1-T7 correspond to timepoints blood was collected.

Suppl. Fig 10. Plot of individual subject data from myeloid dendritic cell (mDC) mechanistic outcomes. Peanut-induced IL-13 and IL-5 expression in mDC-T cell co-cultures (**A**) and CD80 and CD86 expression on mDCs (**B**) are shown. Spontaneous cytokine secretion, as measured in media alone, was subtracted to obtain allergen-induced values for cytokines. All SLIT and OIT subjects are shown. Red lines represent patients achieving sustained unresponsiveness. T1-T7 correspond to timepoints blood was collected.