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Life Sciences Reporting Summary

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Please do not complete any field with "not applicable" or n/a. Refer to the help text for what text to use if an item is not relevant to your study.
For final submission: please carefully check your responses for accuracy; you will not be able to make changes later.

▶ Experimental design

1. **Sample size**

   Describe how sample size was determined.

   > No statistical methods were used to predetermine sample size. The goal was to 2-3 mice per group and repeated, except when clear-cut qualitative differences were observed with an n of 3. In this case, the experiment was stopped at 3 to minimize the number of animals.

2. **Data exclusions**

   Describe any data exclusions.

   > No data were excluded.

3. **Replication**

   Describe the measures taken to verify the reproducibility of the experimental findings.

   > Different replicates have been done in each experiment. Methods have been described in detail in the methods section so they can be reproduced by any investigator.

4. **Randomization**

   Describe how samples/organisms/participants were allocated into experimental groups.

   > Mice that were treated with antigen or left untreated, as well as those that received antibody and those that received isotype control were acquired at the same time and co-housed until sacrificed.

5. **Blinding**

   Describe whether the investigators were blinded to group allocation during data collection and/or analysis.

   > No blinding was performed. Generally, the same person performed the experiment and the analysis of the data.

   Note: all in vivo studies must report how sample size was determined and whether blinding and randomization were used.

6. **Statistical parameters**

   For all figures and tables that use statistical methods, confirm that the following items are present in relevant figure legends (or in the Methods section if additional space is needed).

n/a	Confirmed
☐	☒ The <u>exact sample size</u> (*n*) for each experimental group/condition, given as a discrete number and unit of measurement (animals, litters, cultures, etc.)
☐	☒ A description of how samples were collected, noting whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☐	☒ A statement indicating how many times each experiment was replicated
☐	☒ The statistical test(s) used and whether they are one- or two-sided *Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
☐	☒ A description of any assumptions or corrections, such as an adjustment for multiple comparisons
☐	☒ Test values indicating whether an effect is present *Provide confidence intervals or give results of significance tests (e.g. P values) as exact values whenever appropriate and with effect sizes noted.*
☐	☒ A clear description of statistics including <u>central tendency</u> (e.g. median, mean) and <u>variation</u> (e.g. standard deviation, interquartile range)
☐	☒ Clearly defined error bars in <u>all</u> relevant figure captions (with explicit mention of central tendency and variation)

   See the web collection on statistics for biologists for further resources and guidance.

▶ Software

Policy information about availability of computer code

7. Software

Describe the software used to analyze the data in this study.

> To analyze the data, FlowJo (version 9.9.6 for mac) and GraphPad Prism.

For manuscripts utilizing custom algorithms or software that are central to the paper but not yet described in the published literature, software must be made available to editors and reviewers upon request. We strongly encourage code deposition in a community repository (e.g. GitHub). *Nature Methods* guidance for providing algorithms and software for publication provides further information on this topic.

▶ Materials and reagents

Policy information about availability of materials

8. Materials availability

Indicate whether there are restrictions on availability of unique materials or if these materials are only available for distribution by a third party.

> Viaskin patches were provided by DBV Technologies and they are only available through this company.

9. Antibodies

Describe the antibodies used and how they were validated for use in the system under study (i.e. assay and species).

> Antibodies used:
> Biolegend:
> anti-CD3-APC/Cy7 (clone 17A2) Catalog #: 100222
> anti-CD3-Brillian Violet 785 (clone 17A2) Catalog #: 100232
> anti-CD4-APC/Cy7 (RMA5) Catalog #:100526
> anti-CD4- Pacific Blue (RMA5) Catalog #:100531
> anti-CD25 (PC61) Catalog #:102024
> anti-CCR9 (CW-1.2) Catalog #:128712
> anti-CCR6-Brilliant violet 605 (29-2L17): Catalog #:129819
> anti-CCR4-PE (2G12) Catalog #:131204
> anti-CD45-Alexa Fluor 700 (30-F11) Catalog #:103128
> anti-CD11c-PerCP/Cy5.5 (N418) Catalog #:117328
> anti-MHCII-Alexa Fluor 700 (M5/114.15.2) Catalog #:107622
> anti-MHCII-Pacific Blue (M5/114.15.2) Catalog #:107620
> anti-CD103-PE (2E7) Catalog #:121406
> anti-CD103-FITC (2E7) Catalog #:121420
> anti-EpCAM-PE/Cy7 (G8.8) Catalog #:118216
> anti-CD11b-Brilliant violet 605 (M1/70) Catalog #:101257
> anti-CD301b-APC (URA-1) Catalog #:146814
> anti-CD80- Brilliant violet 650 (16-10A1) Catalog #: 104732
> anti-CD86-Brilliant violet 650 (GL-1) Catalog #:10503
> anti-Ki67-Alexa Fluor 647 (11F6) Catalog #:151206
> anti-CD45.1-APC (A20) Catalog #:110714
>
> eBioscience:
> anti-Foxp3-e450 (FJK-16S) Catalog #: 48-5773-82
> anti-LAP-PerCP-eFluor 710 (TW7-16B4) Catalog #:46-9821-82
> anti-DO11.10 TCR (KJ1-26): 17-5808-80
> anti-CD8a-Alexa Fluor 700 (53-6.7) Catalog #: 56-0081-82
> anti-PDL2-FITC (122) Catalog #:11-9972-82
> anti-PDL1-PerCP-eFluor710 (MIH5) Catalog #:46-5982-82
> anti-Langerin-PE (eBioL31) Catalog #:12-2075-82
>
> Miltenyi Biotec:
> anti-Langerin-APC (caa8-28H10) Catalog #:130-102-169
>
> For flow cytometry, antibodies were used at a concentration following manufacturer's recommendations. For microscopy, different concentrations of primary antibodies were tested.

10. Eukaryotic cell lines

   a. State the source of each eukaryotic cell line used.

> No eukaryotic cell lines were used.

   b. Describe the method of cell line authentication used.

> No eukaryotic cell lines were used.

   c. Report whether the cell lines were tested for mycoplasma contamination.

> No eukaryotic cell lines were used.

   d. If any of the cell lines used are listed in the database of commonly misidentified cell lines maintained by ICLAC, provide a scientific rationale for their use.

> No commonly misidentified cell lines were used.

▶ Animals and human research participants

Policy information about studies involving animals; when reporting animal research, follow the ARRIVE guidelines

11. Description of research animals

   Provide all relevant details on animals and/or animal-derived materials used in the study.

> Balbc, CD45.2+ C57BL/6, CD45.1+ C57BL/6, MHCII-/- and SKH1-Elite were obtained from Charles Rivers or The Jackson laboratory. Mice were females and were used between 6 to 10 weeks of age.
> CCR7-/-, Langerin-DTR, DO11.10 and OTII Rag 2 mice were maintained as breeding colonies at Mount Sinai. Both males and females were used for these strains, between 6 and 12 weeks of age. Controls matching sex and age were used.

Policy information about studies involving human research participants

12. Description of human research participants

   Describe the covariate-relevant population characteristics of the human research participants.

> The study did not involved human research participants.