Activated group 3 innate lymphoid cells promote T-cell-mediated immune responses

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 2766957
Author(s) von Burg, Nicole; Chappaz, Stéphane; Baerenwaldt, Anne; Horvath, Edit; Bose Dasgupta, Somdeb; Ashok, Devika; Pieters, Jean; Tacchini-Cottier, Fabienne; Rolink, Antonius; Acha-Orbea, Hans; Finke, Daniela
Author(s) at UniBasel Pieters, Jean ; Finke, Daniela ;
Year 2014
Title Activated group 3 innate lymphoid cells promote T-cell-mediated immune responses
Journal Proceedings of the National Academy of Sciences
Volume 111
Number 35
Pages / **Article-Number** 12835-40
Keywords T-cell activation, antigen presentation
Group 3 innate lymphoid cells (ILC3s) have emerged as important cellular players in tissue repair and innate immunity. Whether these cells meaningfully regulate adaptive immune responses upon activation has yet to be explored. Here we show that upon IL-1β stimulation, peripheral ILC3s become activated, secrete cytokines, up-regulate surface MHC class II molecules, and express costimulatory molecules. ILC3s can take up latex beads, process protein antigen, and consequently prime CD4(+) T-cell responses in vitro. The cognate interaction of ILC3s and CD4(+) T cells leads to T-cell proliferation both in vitro and in vivo, whereas its disruption impairs specific T-cell and T-dependent B-cell responses in vivo. In addition, the ILC3-CD4(+) T-cell interaction is bidirectional and leads to the activation of ILC3s. Taken together, our data reveal a novel activation-dependent function of peripheral ILC3s in eliciting cognate CD4(+) T-cell immune responses.
Publisher National Academy of Sciences
ISSN/ISBN 0027-8424 ; 1091-6490
edoc-URL http://edoc.unibas.ch/dok/A6328797
Full Text on edoc No;
Digital Object Identifier DOI 10.1073/pnas.1406908111
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/25136120
ISI-Number WOS:000341230800071
Document type (ISI) Journal Article