

Regulation of lung dendritic cell homeostasis by Epstein-Barr virus induced gene 2 (EBI2)

Epstein-Barr virus-induced gene 2 (EBI2), is a chemotactic receptor, highly expressed by immune cells. Upon activation by its ligand, 7 α ,25-dihydroxycholesterol (7 α ,25-OHC), EBI2 activates downstream signals inducing a wide range of functional responses, including inflammation, localization and proliferation. For dendritic cells, earlier work shows that EBI2 is critical for the generation and correct positioning of splenic DCs and the initiation of subsequent immune responses. Whether EBI2 has a role in localization and function of DCs in the murine lung has not been investigated. To understand its role for lung DC homeostasis and development we analyzed the phenotypic differences in lung dendritic cell populations in WT and EBI2 KO animals using a novel high dimensional phenotyping strategy. We found that absence of EBI2 resulted in dramatically decreased percentage and number in lung resident CD11b+ DCs due to decreased in situ proliferation as measured by Ki67 expression. In contrast, no effect loss of EBI2 was seen on bone marrow resident DC progenitors. These findings demonstrated that loss of EBI2 disrupts lung DC homeostasis and reveals EBI2 as a crucial regulator of peripheral organ resident DC homeostasis.

Keywords : cDC2, EBI2

Authors :

References : , , ,

Authors

Lili Zhang 1, Natalie Katzmarski 1, Alexander Pfeifer 2, Florent Ginhoux 3, Andreas Schlitzer 1, Francesca Copperi 2, Mohamed Ibrahim 1, Camille Bleriot 3,

1. Molecular Immunology & Cell Biology, LIMES, Bonn, GERMANY

2. Institute of Pharmacology and Toxicology Biomedical Center, Bonn, GERMANY

3. Singapore Immunology Network (SIgN), Singapore, SINGAPORE