CD8alpha+ dendritic cells are required for efficient entry of Listeria monocytogenes into the spleen.

In addition to their bridging function between innate and adaptive immunity, dendritic cells (DCs) may also contribute to primary resistance against infection. Here we analyzed the role of DCs during infection with Listeria monocytogenes by performing systemic in vivo depletion of these cells. We showed that CD8alpha(+) DCs were crucial for L. monocytogenes spreading and proliferation in the spleen. Efficient and rapid uptake of L. monocytogenes by CD8alpha(+) DCs required the small GTPase Rac1 and is a general characteristic of this DC subpopulation in filtering particles out of the blood. Thus, CD8alpha(+) DCs appear to play an important role for efficient bacterial entry into the spleen, which is of relevance for subsequent immune responses.