

**Lsc regulates Marginal-Zone B cell migration and adhesion and is required for the IgM T-dependent primary antibody response.**

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The antibody response to T-dependent antigens is characterized by the early production of IgM secretion followed by an IgG response with higher affinity. We demonstrate that Lsc, a protein that regulates G-protein coupled receptor signaling and RhoA activation in hematopoietic cells, is required for the IgM, but not IgG, response to T-dependent antigens. In the absence of Lsc, increased proportions of naïve and *in vivo* activated marginal zone B cells migrate toward sphingosine-1-phosphate, bind integrin ligands, but do not detach efficiently. As a result of these perturbations, *lsc*<sup>-/-</sup> marginal zone B cells are impaired in integrin-mediated migration *in vitro*, traffic efficiently in the course of an immune response *in vivo* and do not contribute to the TD antibody response. Together, our data indicate that Lsc regulates marginal zone B cell migration and adhesion and is necessary for these cells to participate in the IgM primary response to T-dependent antigens.

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