Abstract

Antigen presentation during which antigen fragments in complex with MHC glycoproteins are recognized by T cell antigen-specific receptors is necessary for the initiation of adaptive immune response. During this process, immunological synapse is assembled at the site of contact between the T cell and the antigen-presenting cell (APC). This leads to the activation of receptors on the surface of both cells followed by triggering of multiple signaling pathways. However, our knowledge about the signaling occurring at the APC-side of the IS is limited in comparison to the T cell side. Here, we analyze role of Src family kinases in the APC signaling pathways. For this purpose, constructs targeting Csk kinase to the plasma membrane of APCs were prepared to inhibit SFKs there. We show that expression of these constructs inhibits activation of SFKs, calcium mobilization and cell activation of K46 B cell line. Further, expression of these constructs in hematopoietic progenitors attenuates their differentiation into dendritic cells which then results in their decreased ability to stimulate T cells.