

A key role for Myosin II in B Cell Receptor-driven Antigen Presentation

Ana-Maria Lennon-Duménil
Francia

Antigen (Ag) capture and presentation onto MHC class II molecules by B lymphocytes is mediated by their surface antigen receptor. The transport of vesicles that carry MHC class II- and BCR-Ag complexes must therefore be coordinated for them to converge into lysosomes in order to ensure efficient processing. Here, we show that

Inserm 653, Institut Curie 12, rue Lhomond 75005, Paris
tel: 331-42-34-64-27 fax: 331-42-34-64-38

the actin-associated motor protein Myosin II is essential for this process. We found that Myosin II is activated upon BCR engagement and associates to MHC class II-Ii complexes. Inhibition of Myosin II activity compromises the convergence and concentration of MHC class II and BCR-Ag complexes into lysosomes. Accordingly, formation of MHC class II-peptides and subsequent CD4 T cell activation are impaired in cells lacking Myosin II activity. Myosin II therefore emerges as a key motor protein in BCR-driven Ag processing and presentation.